

# TRAFFIC STUDY

FOR  
PROPOSED DEVELOPMENT

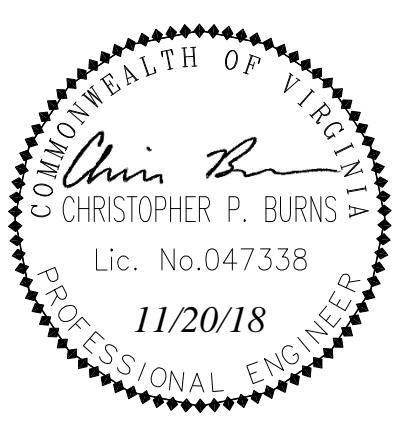
# 1222 PATRICK HENRY PRD

IN

TOWN OF BLACKSBURG, VIRGINIA

DATE: JULY 23, 2018  
REVISED: OCTOBER 2, 2018  
REVISED: NOVEMBER 20, 2018

~Job No. 24180058.00~



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## **1. INTRODUCTION**

The developer for this project is proposing to develop the existing parcel located at 1222 Patrick Henry Drive as new multi-family housing. The existing site consists of a single-family residence with associated gravel driveway from Patrick Henry Drive. The proposed development consists of multi-family units with 276 bedrooms (see Appendix A for vicinity map and Appendix B for concept plan). Two full access entrances are proposed on Patrick Henry Drive.

The site is located on the north side of Patrick Henry Drive between Progress Street and Seneca Drive and is identified as Town of Blacksburg Tax Parcel #196-A5. The property is currently zoned R-5, Transitional Residential District.

Patrick Henry Drive is a four-lane, undivided roadway that provides east/west access between Toms Creek Road and Harding Avenue. Progress Street is a two-lane undivided roadway that provides north/south access from Givens Lane to North Main Street. The posted speed on both of these local roads is 25 mph. The existing intersection of Patrick Henry Drive and Progress Street is signalized.

North Main Street is a four-lane, undivided roadway that provides north/south access through Blacksburg and adjacent areas. The posted speed on this section of North Main Street is 35 mph. The existing intersection of Patrick Henry Drive and North Main Street is signalized.

Level of service and queue lengths will be analyzed for the Patrick Henry Drive/Progress Street and Patrick Henry Drive/North Main Street intersections. Three different scenarios will be considered: Existing Condition 2018, Background Condition 2020, and Buildout Condition 2020 to determine the effects of the background traffic growth and the proposed development on this intersection. Turn lane requirements will be analyzed at both proposed entrances to determine if right or left turn lanes are warranted.

Level of service (LOS) for signalized intersections is evaluated based on control delay per vehicle and the driver's perception of those conditions. Control delay is the portion of the total delay attributed to the control at the intersection. Table 1 depicts the LOS scale with corresponding control delay per vehicle, with LOS "A" representing the best operating conditions and LOS "F" representing the worst.

LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS	
Level Of Service	Avg. Control Delay (Sec./Veh)
<b>A</b>	<b><math>\leq 10</math></b>
<b>B</b>	<b><math>&gt; 10 - 20</math></b>
<b>C</b>	<b><math>&gt; 20 - 35</math></b>
<b>D</b>	<b><math>&gt; 35 - 55</math></b>
<b>E</b>	<b><math>&gt; 55 - 80</math></b>
<b>F</b>	<b><math>\geq 80</math></b>

Table 1: LOS Criteria for Signalized Intersections (HCM)

This study was undertaken by Balzer and Associates, Inc. to:

- determine the total number of vehicle trips generated by the potential development to be added to the adjacent street network;
- determine the impacts to level of service and queue lengths at the existing signalized intersection as a result of the background traffic growth and from the proposed development;
- and to determine turn lane requirements for the project.

## **2. ANALYSIS OF EXISTING CONDITIONS**

The site currently contains a single-family residential house that will be demolished to allow for the proposed development. The existing intersections of Patrick Henry Drive and Progress Street and Patrick Henry Drive and North Main Street are signalized. Signal timing information for the intersection was provided by the Town of Blacksburg and is included in Appendix D. VDOT traffic count data was available for the existing roadways and is listed below and included in Appendix C.

### **2017 VDOT Traffic Count Data:**

Progress Street (south of Patrick Henry Drive):  
AADT = 3,800 vpd  
Directional Factor = 0.529  
K Factor = 0.09

Progress Street (north of Patrick Henry Drive):  
AADT = 1,100 vpd  
Directional Factor = 0.759  
K Factor = 0.109

Patrick Henry Drive:  
AADT = 8,900 vpd  
Directional Factor = 0.522  
K Factor = 0.098

North Main Street (south of Patrick Henry Drive):  
AADT = 15,000 vpd  
Directional Factor = 0.562  
K Factor = 0.081

North Main Street (north of Patrick Henry Drive):  
AADT = 7,500 vpd  
Directional Factor = 0.636  
K Factor = 0.098

In addition to the VDOT published traffic count data, manual tube counts were performed in several locations by the developer in cooperation with the Town of Blacksburg to determine the appropriate peak hour windows. These tube counts were supplemented by turning movement counts at the existing signalized intersections. Turning movement counts were performed for the Patrick Henry Drive/Progress Street intersection on Wednesday, April 4, 2018 from 8:00 AM – 10:00 AM and from 4:30 PM – 6:30 PM and on Thursday, April 5, 2018 from 7:30 AM – 11:30 AM and from 3:00 PM – 7:00 PM. Turning movement counts were performed for the Patrick Henry Drive/North Main Street intersection on Wednesday, September 20, 2018 from 8:00 AM – 10:00 AM and from 4:30 PM – 6:30 PM and on Thursday, September 21, 2018 from 7:30 AM –

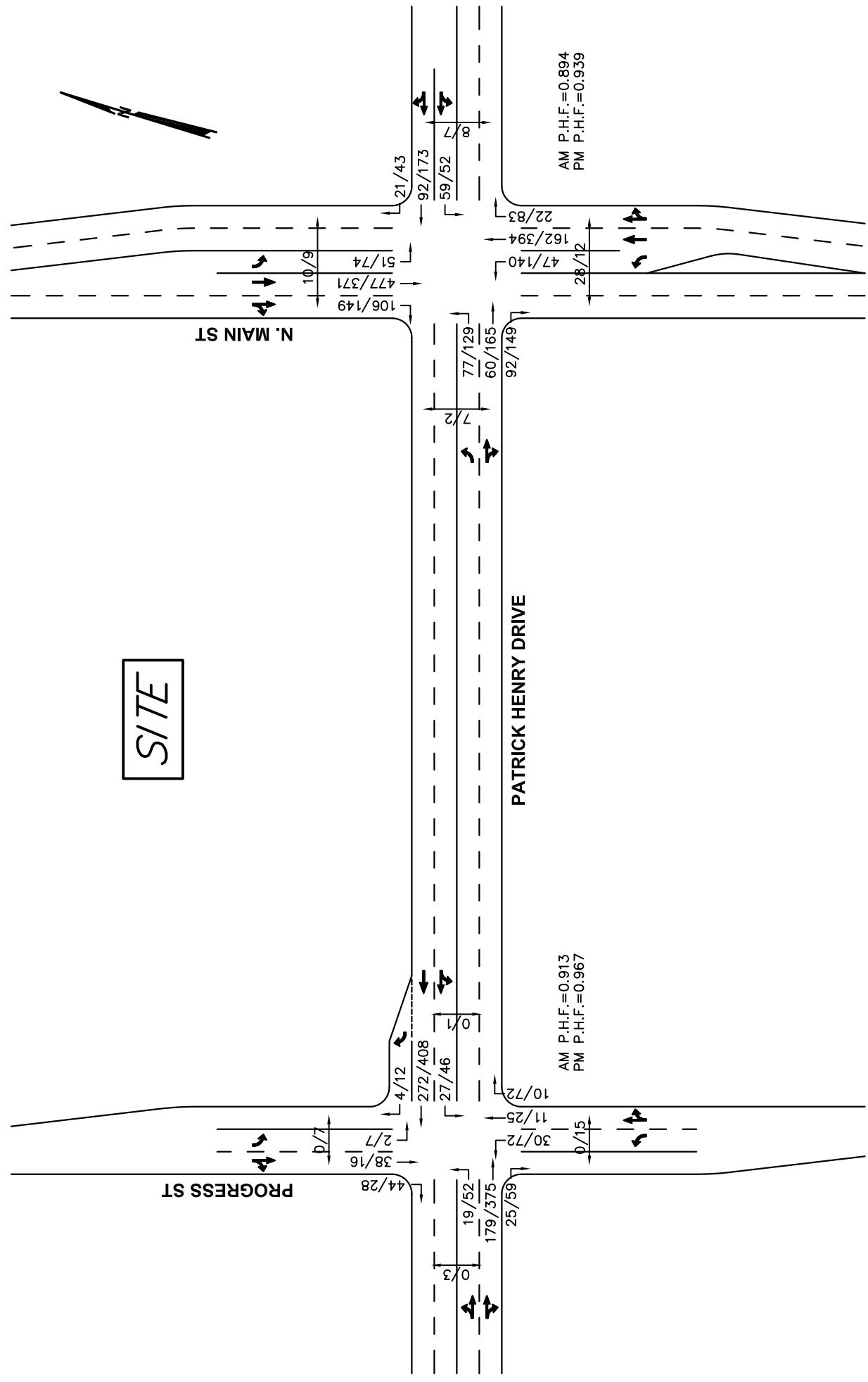
11:30 AM and from 3:00 PM – 7:00 PM. These days and hours were chosen to capture the MWF and TT class schedules, and to capture the AM and PM peak hours on each day. This manual traffic count data is provided in Appendix C. Figure 1 graphically depicts the existing peak hour traffic volumes and Figure 2 shows the heavy vehicle percentages obtained from the counts.

Utilizing the data collected, the peak hour for AM analysis for the network was determined to be 8:30 AM – 9:30 AM on Thursday. The peak hour for PM analysis for the network was determined to be 5:00 PM – 6:00 PM on Thursday. The peak hours were determined by comparing the total vehicle volume at the two signalized intersections for each 15-minute period of each day.

The *Synchro 10* software was used to analyze the level of service and delays and the *SimTraffic 10* software was used to analyze the queue lengths for existing weekday AM and PM peak hours. The existing conditions levels of service, delays, and queue lengths are shown in Table 3. The *Synchro 10* and *SimTraffic 10* results are included in Appendix F.

As shown in Table 2, the intersection currently functions at an overall LOS ‘C’ in both the AM and PM peak hours. This intersection functions at an acceptable level of service under existing conditions.

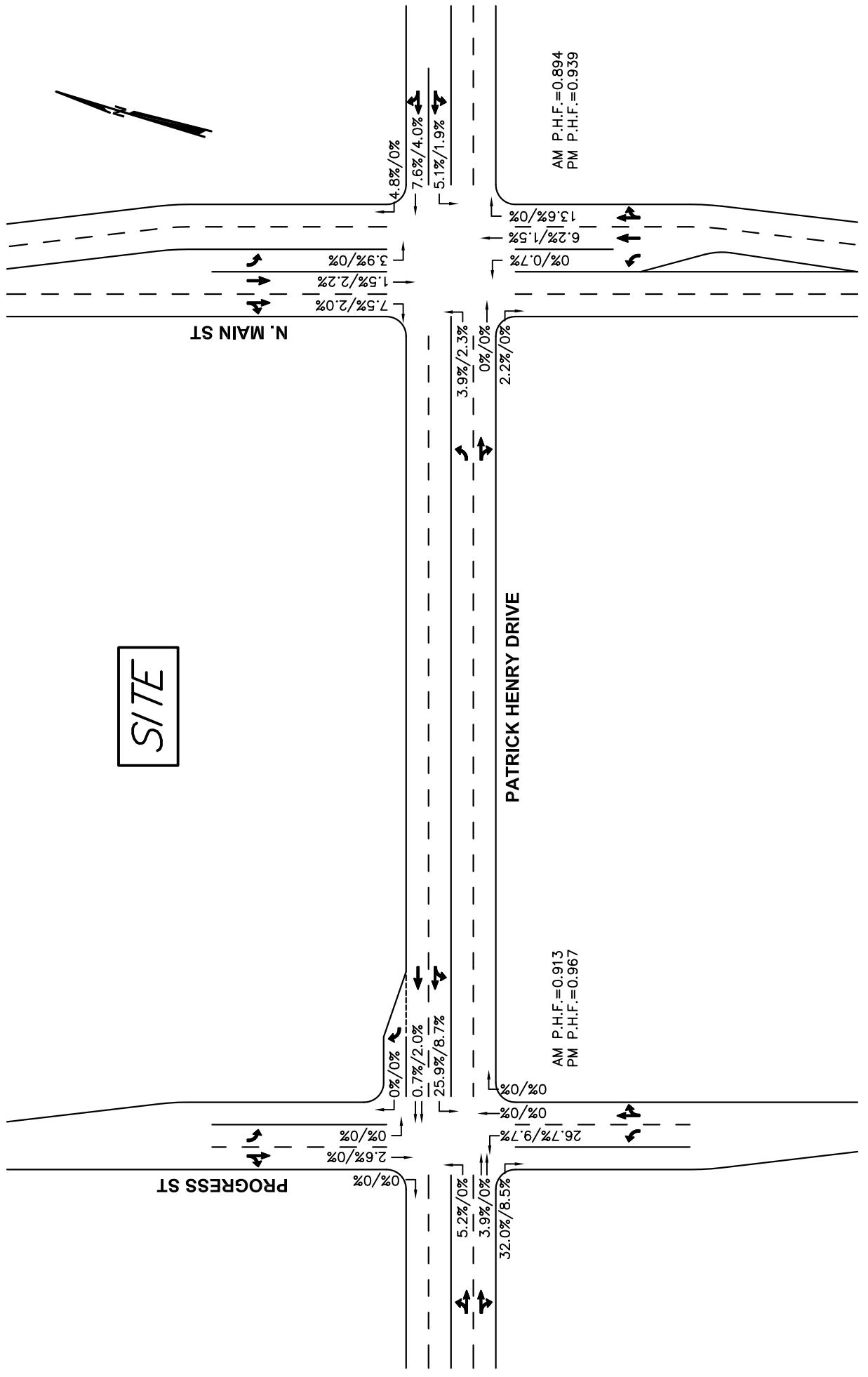
**FIGURE 1: 2018 EXISTING TURNING MOVEMENTS**



**LEGEND**

$\overline{xx}/\underline{xx}$ : AM/PM Peak Hour Traffic  
 $\underline{xx}/\overline{xx}$ : AM/PM Peak Hour Pedestrians

**FIGURE 2: HEAVY VEHICLE PERCENTAGES**



**Table 2 - 2018 Existing Condition**  
**Timbre Apartments - Blacksburg, VA**  
**Intersection Level of Service and Queuing Analysis**

Intersection	Control	Approach	Available Storage (ft)	Levels of Service		Average Queues (ft)		Max Queues (ft)	
				AM	PM	AM	PM	AM	PM
1. Patrick Henry Drive & Progress Street	Signal	EBLT	--	C (25.2)	C (26.1)	61	125	126	210
		EBTR	--	C (24.8)	C (25.4)	46	88	107	193
		WBLT	--	B (16.8)	C (23.8)	54	99	116	186
		WBT	--	B (16.5)	C (23.3)	49	105	108	188
		WBR	150	B (14.8)	B (19.6)	4	8	31	52
		NBL	80	C (27.8)	C (34.2)	25	50	74	98
		NBTR	--	C (21.5)	C (25.7)	15	46	49	148
		SBL	140	C (23.7)	C (28.6)	1	6	18	33
		SBTR	--	C (21.8)	C (24.5)	31	21	82	61
		Overall		C (20.8)	C (25.3)				
2. Patrick Henry Drive & North Main Street	Signal	EBL	--	C (26.5)	C (25.5)	47	84	115	188
		EBTR	--	C (28.9)	C (33.5)	74	178	178	342
		WBLT	100	C (26.8)	C (33.6)	69	120	142	211
		WBTR	--	C (26.6)	C (33.3)	27	60	81	175
		NBL	100	C (21.3)	C (22.7)	32	81	87	150
		NBTR	--	C (23.1)	C (26.4)	62	130	132	239
		SBL	100	B (19.8)	C (22.5)	33	46	112	176
		SBTR	--	C (28.7)	C (30.9)	148	141	242	253
		Overall		C (26.9)	C (29.4)				

Notes:

(1) Numbers in parentheses represent control delay in seconds per vehicle as reported by Synchro.

(2) Queues are average and 95th percentile queues as reported by SimTraffic with 10 recording intervals of 60 minutes.

### **3. ANALYSIS OF FUTURE CONDITIONS WITHOUT DEVELOPMENT**

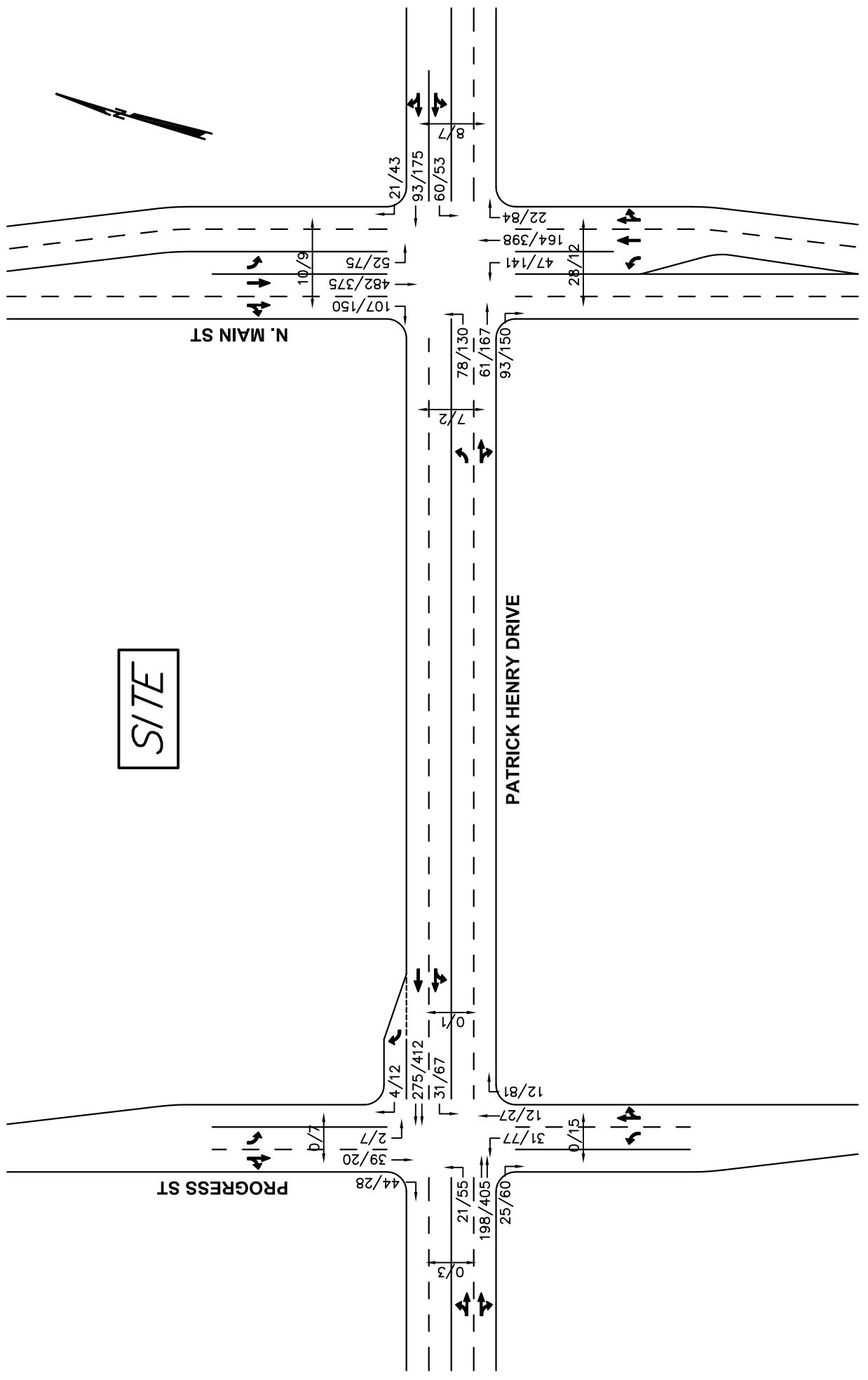
It is anticipated that the proposed development will be constructed and in use within 2 years, or in the year 2020. To analyze the future conditions and obtain the projected background traffic volumes, an annual growth factor was applied to the existing traffic volumes. Per discussions with the Town of Blacksburg, a growth rate of 0.5% was utilized to determine background traffic volumes. Figure 3 graphically depicts the projected traffic in 2020 with the growth rate applied.

It should also be noted that there is a separate rezoning request that has been submitted for Terrace View Apartments. The Terrace View project will include redevelopment of the site with a net increase of 988 bedrooms. A traffic study has been submitted for this project under separate cover. For the purposes of this analysis, the anticipated increase in traffic associated with the Terrace View development has been included with the background traffic for this project.

Table 4 provides a summary of the levels of service, delays, and queue lengths for the 2018 background condition. The *Synchro 10* and *SimTraffic 10* output can be found in Appendix F.

As shown in Table 4 for the background condition, the intersection functions at an overall LOS 'C' in both the AM and PM peak hours. This intersection functions at an acceptable level of service with existing and background traffic volumes included.

**FIGURE 3: 2020 BACKGROUND TURNING MOVEMENTS**



**LEGEND**

xx/xx: AM/PM Peak Hour Traffic  
xx/xx: AM/PM Peak Hour Pedestrians

**Table 3 - 2020 Background Condition**  
**Timbre Apartments - Blacksburg, VA**  
**Intersection Level of Service and Queuing Analysis**

Intersection	Control	Approach	Available Storage (ft)	Levels of Service		Average Queues (ft)		Max Queues (ft)	
				AM	PM	AM	PM	AM	PM
1. Patrick Henry Drive & Progress Street	Signal	EBLT	--	C (25.2)	C (26.4)	63	134	121	230
		EBTR	--	C (24.7)	C (25.6)	44	103	115	211
		WBLT	--	B (17.2)	C (25.0)	55	109	122	198
		WBT	--	B (17.0)	C (24.3)	53	112	109	198
		WBR	150	B (15.1)	C (20.1)	3	8	31	34
		NBL	80	C (27.9)	C (34.9)	25	53	72	97
		NBTR	--	C (21.8)	C (26.4)	17	46	52	124
		SBL	140	C (24.0)	C (29.1)	2	5	20	34
		SBTR	--	C (22.2)	C (25.1)	33	19	89	56
		Overall		C (21.1)	C (26.0)				
2. Patrick Henry Drive & North Main Street	Signal	EBL	--	C (25.2)	C (25.6)	47	85	111	178
		EBTR	--	C (28.2)	C (34.0)	66	190	151	392
		WBLT	100	C (27.1)	C (33.9)	86	126	175	228
		WBTR	--	C (26.9)	C (33.5)	26	68	114	189
		NBL	100	B (18.5)	C (22.9)	31	87	88	150
		NBTR	--	C (20.2)	C (26.6)	61	137	134	287
		SBL	100	B (17.2)	C (22.7)	30	50	83	152
		SBTR	--	C (25.1)	C (31.2)	136	144	229	248
		Overall		C (24.5)	C (29.6)				

Notes:

(1) Numbers in parentheses represent control delay in seconds per vehicle as reported by Synchro.

(2) Queues are average and 95th percentile queues as reported by SimTraffic with 10 recording intervals of 60 minutes.

#### **4. TRIP GENERATION**

Trip generation for this study was based on the concept plan created by Balzer and Associates, Inc. (please see Appendix B) and information provided by the developer regarding the expected uses of the property. The policies and procedures found in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 10th Edition*, were employed to determine the potential site generated traffic volumes for the proposed development in the AM and PM peak hours.

For the off-campus student apartment use, trips were based on the total number of bedrooms. The projected trips were calculated using the equations and directional splits provided in the ITE Manual for student apartments over ½ mile from campus. The equations and directional splits are listed below:

<u>Time Period:</u>	<u>Equation:</u>	<u>% Entering / % Exiting:</u>
Weekday	$T = 4.09(X) - 78.98$	50% Enter / 50% Exit
AM Peak Hr of Adj. Traffic	$T = 0.15(X) + 10.64$	28% Enter / 72% Exit
PM Peak Hr of Adj. Traffic	$T = 0.31(X) - 1.81$	52% Enter / 48% Exit

			Trip Generation						
Land Use			AM Peak Hour			PM Peak Hour			Weekday
Proposed Development	ITE Code	Independent Variable	Enter	Exit	Total	Enter	Exit	Total	Total
Off Campus Student Apartments	225	215 Bedrooms	12	31	43	34	31	65	800

Table 4: Site-Generated Traffic

Based on knowledge of the area, it is anticipated that there will be significant usage of alternate means of transportation by residents of this development, including walking, bicycling, and bus via the Blacksburg Transit (BT). The BT is a particularly heavily used form of transportation, especially for trips to and from the Virginia Tech campus.

Based on discussions with the Town of Blacksburg, a 20% reduction has been applied to account for bus, pedestrian, and bicycle trips. Table 5 shows the site-generated trips with the 20% reduction.

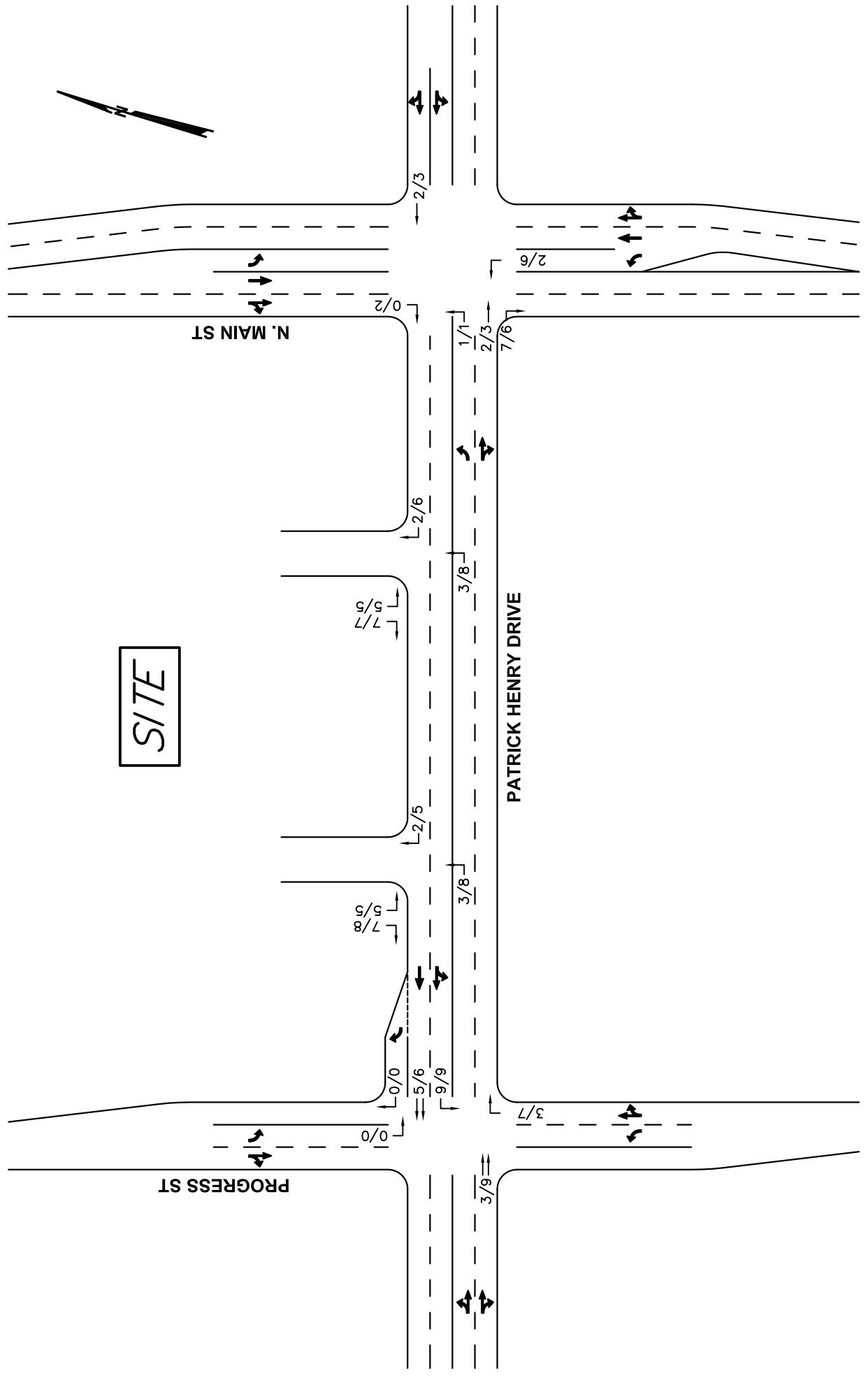
			Trip Generation						
Land Use			AM Peak Hour			PM Peak Hour			Weekday
Proposed Development	ITE Code	Independent Variable	Enter	Exit	Total	Enter	Exit	Total	Total
Off Campus Student Apartments - Proposed	225	215 Bedrooms	10	24	34	27	25	52	640

Table 5: Site-Generated Traffic (With 20% Reduction)

## **5. SITE TRAFFIC DISTRIBUTION AND ASSIGNMENT**

The distribution of potential site generated traffic was completed by observing the directional splits from the traffic counts and by applying engineering judgment based on knowledge of the proposed uses, as well as the surrounding area. The directional percentages were then applied to the site generated traffic to determine the ingress/egress movements for each direction. Traffic assignment for the site-generated traffic is shown graphically in Figure 4.

**FIGURE 4: SITE-GENERATED TRAFFIC**



**LEGEND**

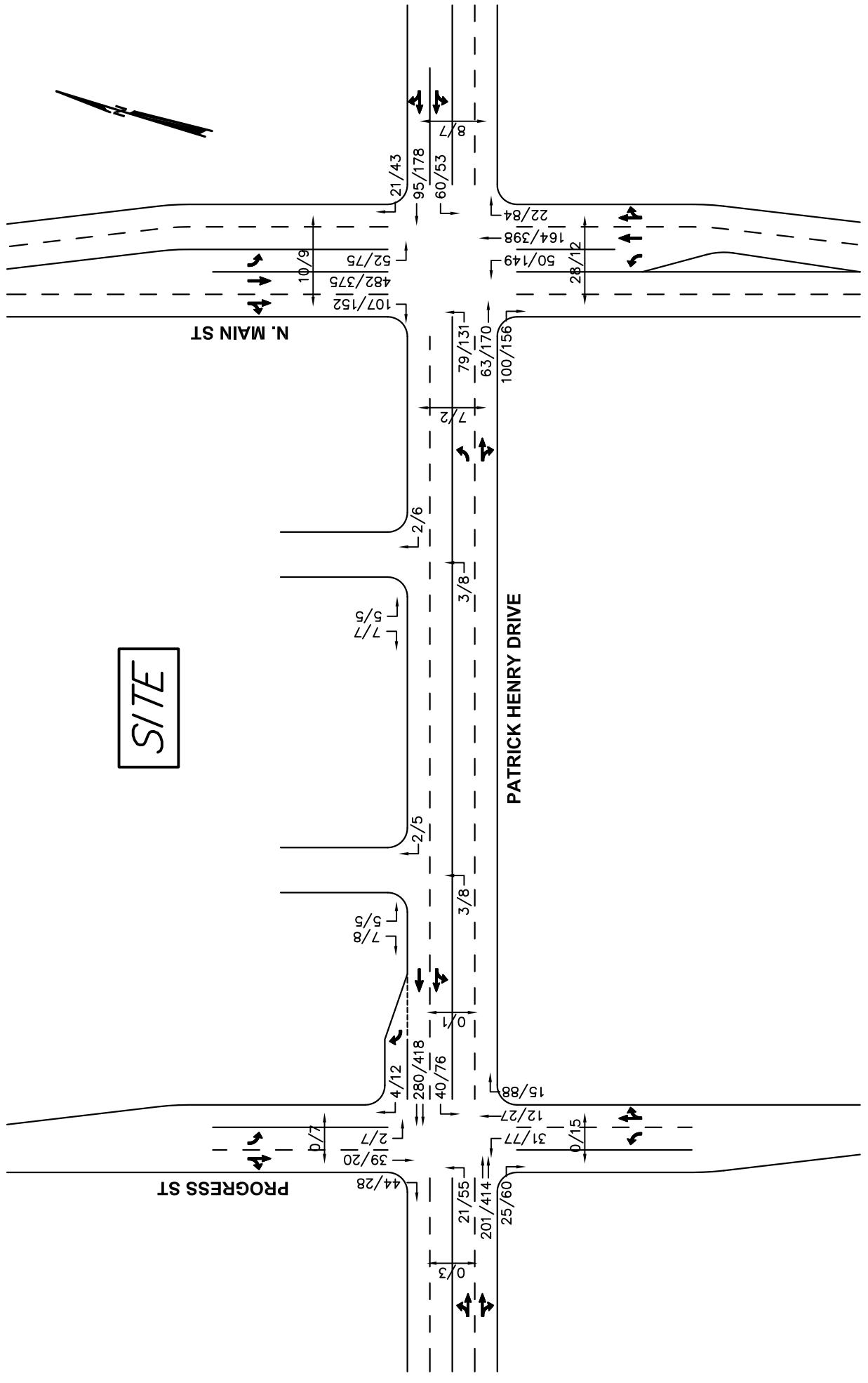
$\nearrow \searrow$ : AM/PM Peak Hour Traffic  
 $\nearrow \nearrow$ : AM/PM Peak Hour Pedestrians

## **6. ANALYSIS OF FUTURE CONDITIONS WITH DEVELOPMENT**

The buildout traffic was calculated by adding the 2020 background traffic (Figure 3) to the adjusted traffic from the proposed development (Figure 5). The 2020 buildout traffic for the signalized intersections is shown in Figure 6. The intersections were then modeled and evaluated using the *Synchro* and *SimTraffic* software. Table 8 provides a summary of the levels of service, delays, and queue lengths for the 2020 buildout condition. The *Synchro 10* and *SimTraffic 10* output can be found in Appendix F.

As shown in Table 6, the intersections will continue to function at an acceptable level of service with the projected background volumes and the site-generated traffic. The existing signalized intersections will function at an overall LOS 'C' in both the AM and PM peak hours. The levels of service do not change from Background to Buildout conditions. There will be minimal increases in overall control delay as a result of the proposed development and no signal improvements are recommended as a result of this development.

**FIGURE 5: 2020 BUILDOUT TURNING MOVEMENTS**



**Table 6 - 2020 Buildout Condition**  
**Timbre Apartments - Blacksburg, VA**  
**Intersection Level of Service and Queuing Analysis**

Intersection	Control	Approach	Available Storage (ft)	Levels of Service		Average Queues (ft)		Max Queues (ft)	
				AM	PM	AM	PM	AM	PM
1. Patrick Henry Drive & Progress Street	Signal	EBLT	--	C (25.2)	C (26.5)	66	140	137	234
		EBTR	--	C (24.7)	C (25.7)	47	106	112	200
		WBLT	--	B (17.4)	C (25.5)	61	113	130	204
		WBT	--	B (17.2)	C (24.7)	56	115	122	205
		WBR	150	B (15.2)	C (20.3)	3	8	31	36
		NBL	80	C (27.7)	C (35.0)	28	56	72	96
		NBTR	--	C (21.9)	C (26.8)	19	50	47	176
		SBL	140	C (24.0)	C (29.3)	1	5	15	33
		SBTR	--	C (22.3)	C (25.2)	33	23	88	66
		<b>Overall</b>		<b>C (21.2)</b>	<b>C (26.3)</b>				
2. Patrick Henry Drive & North Main Street	Signal	EBL	--	C (25.3)	C (25.5)	49	81	123	184
		EBTR	--	C (28.6)	C (34.9)	76	196	180	358
		WBLT	100	C (27.4)	C (34.1)	90	126	173	228
		WBTR	--	C (27.3)	C (33.7)	29	65	136	184
		NBL	100	B (18.7)	C (22.7)	33	87	86	150
		NBTR	--	C (20.5)	C (26.5)	63	135	141	252
		SBL	100	B (17.4)	C (22.8)	30	47	77	143
		SBTR	--	C (25.5)	C (31.4)	146	144	248	252
		<b>Overall</b>		<b>C (24.9)</b>	<b>C (29.8)</b>				

Notes:

(1) Numbers in parentheses represent control delay in seconds per vehicle as reported by Synchro.

(2) Queues are average and 95th percentile queues as reported by SimTraffic with 10 recording intervals of 60 minutes.

## **TURN LANE REQUIREMENTS**

Turn lane requirements were analyzed at the proposed entrances onto Patrick Henry Drive. Turn lane requirements were evaluated by following the procedures and methodologies found in the *VDOT Road Design Manual, Volume I, Appendix F*.

Turning volumes were obtained from Figure 4. The approach volumes and opposing volumes were derived from the background volumes shown in Figure 3.

### **Patrick Henry Drive - Right-Turn Lane Warrant at Western Site Entrance**

#### **AM Peak Hour Analysis:**

- 2 Vehicles per Hour Turning Right from Patrick Henry Drive
- Approach Volume = 319 VPH + 2 VPH = 321 VPH
- Right Turn Lane Requirement, as per *VDOT Road Design Manual, Appendix F*:  
***None Warranted*** (please see Appendix E).

#### **PM Peak Hour Analysis:**

- 5 Vehicles per Hour Turning Right from Patrick Henry Drive
- Approach Volume = 500 VPH + 5 VPH = 505 VPH
- Right Turn Lane Requirement, as per *VDOT Road Design Manual, Appendix F*:  
***None Warranted*** (please see Appendix E).

### **Patrick Henry Drive - Left-Turn Lane Warrant at Western Site Entrance**

#### **AM Peak Hour Analysis:**

- 3 Vehicles per Hour Turning Left from Patrick Henry Drive
- Opposing Volume = 321 VPH
- Right Turn Lane Requirement, as per *VDOT Road Design Manual, Appendix F*:  
***None Warranted*** (please see Appendix E).

#### **PM Peak Hour Analysis:**

- 8 Vehicles per Hour Turning Left from Patrick Henry Drive
- Opposing Volume = 505 VPH
- Right Turn Lane Requirement, as per *VDOT Road Design Manual, Appendix F*:  
***None Warranted*** (please see Appendix E).

### **Patrick Henry Drive - Right-Turn Lane Warrant at Eastern Site Entrance**

#### **AM Peak Hour Analysis:**

- 2 Vehicles per Hour Turning Right from Patrick Henry Drive
- Approach Volume = 310 VPH + 4 VPH = 314 VPH
- Right Turn Lane Requirement, as per *VDOT Road Design Manual, Appendix F*:  
***None Warranted*** (please see Appendix E).

#### **PM Peak Hour Analysis:**

- 6 Vehicles per Hour Turning Right from Patrick Henry Drive
- Approach Volume = 491 VPH + 11 VPH = 502 VPH
- Right Turn Lane Requirement, as per *VDOT Road Design Manual, Appendix F*:  
***None Warranted*** (please see Appendix E).

### **Patrick Henry Drive - Left-Turn Lane Warrant at Western Site Entrance**

#### **AM Peak Hour Analysis:**

- 3 Vehicles per Hour Turning Left from Patrick Henry Drive
- Opposing Volume = 314 VPH
- Right Turn Lane Requirement, as per *VDOT Road Design Manual, Appendix F*:  
***None Warranted*** (please see Appendix E).

#### **PM Peak Hour Analysis:**

- 8 Vehicles per Hour Turning Left from Patrick Henry Drive
- Opposing Volume = 502 VPH
- Right Turn Lane Requirement, as per *VDOT Road Design Manual, Appendix F*:  
***None Warranted*** (please see Appendix E).

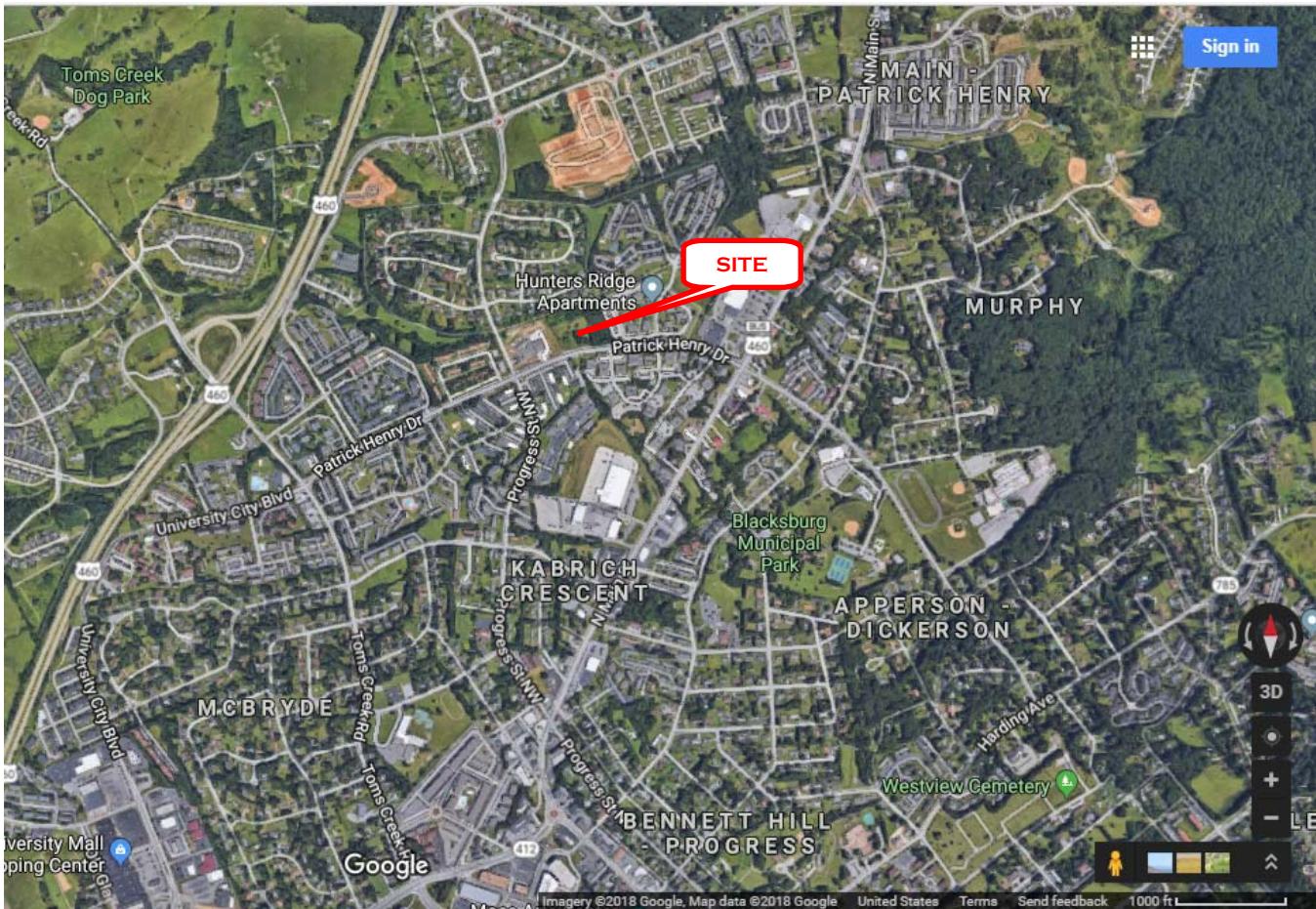
## **7. CONCLUSIONS**

Based on the data collected, the assumptions made, and the potential site generated traffic, the results of the analysis are:

- the proposed project will increase traffic at the existing intersections and on the surrounding road network;
- traffic volume increases at the existing intersections will not significantly impact level of service or delay at the existing intersections;
- the existing intersections operates at an acceptable LOS with the projected background traffic volumes and will continue to do so with the site-generated traffic volumes included;
- no signal timing modifications are recommended at the existing intersections;
- no right or left turn lanes or tapers are warranted at either of the full access entrances to the site.

## **Appendix A**

### **Vicinity Map**

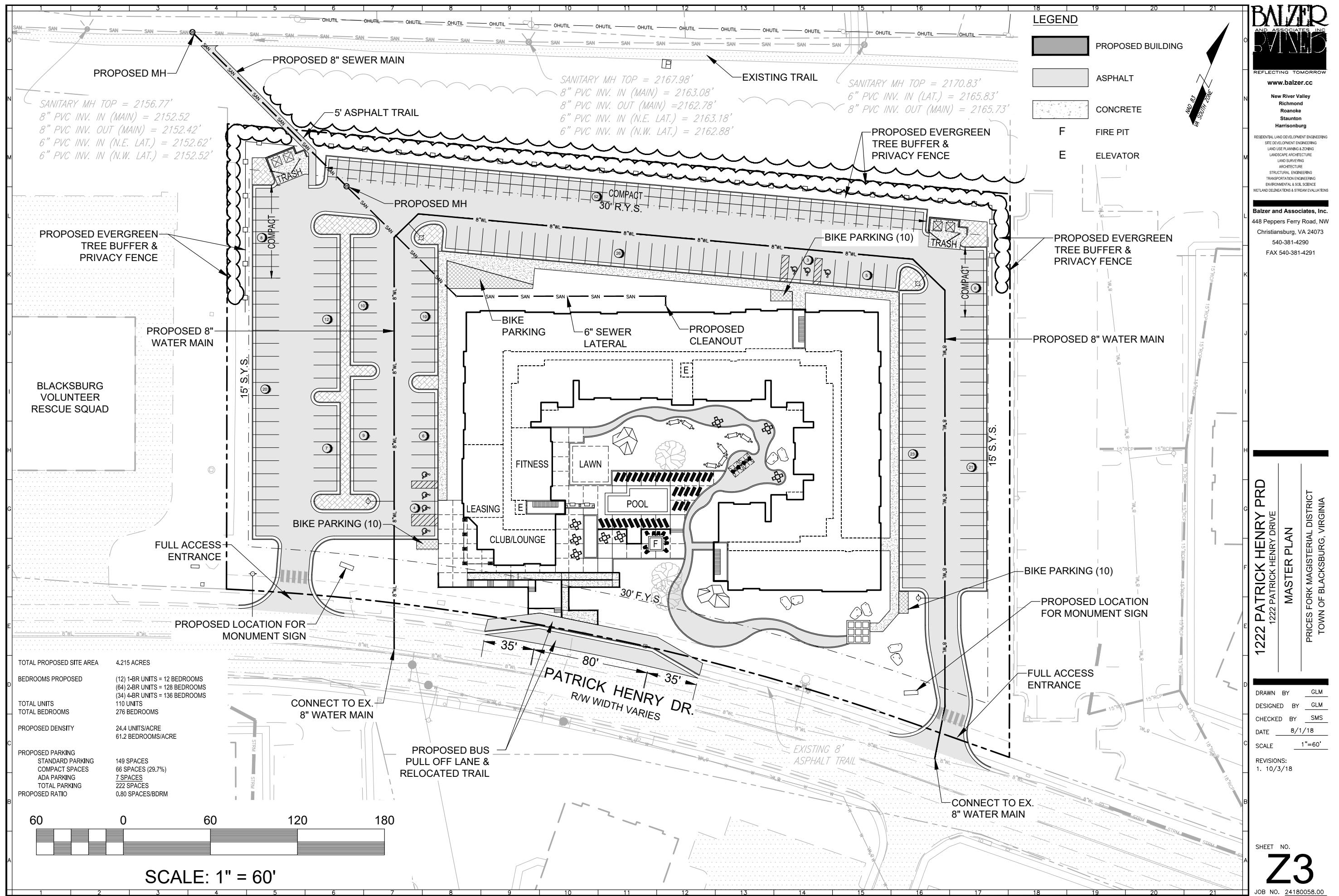


Traffic Study  
1222 Patrick Henry PRD – Blacksburg, VA  
November 20, 2018

**BALZER**  
BALZER ASSOCIATES INC.  
**GTNED**  
REFLECTING TOMORROW

## **Appendix B**

### **Concept Plan**



## **Appendix C**

### **Existing Traffic Data**

Virginia Department of Transportation  
Traffic Engineering Division

2017

Annual Average Daily Traffic Volume Estimates By Section of Route  
Town of Blacksburg

Route	Length	AADT	QA	4Tire	Bus	Truck				QC	K Factor	Dir Factor	AAWDT	QW	Year
						2Axle	3+Axle	1Trail	2Trail						
<b>Town of Blacksburg</b>															
(F618) Holiday Lane	0.03	40	R			End State Maintenance				NA		NA		NA	05/08/2013
(F618) Holiday Lane	0.09	120	R			SCL Blacksburg				NA		NA		NA	05/08/2013
(2) University City Blvd	1.11	8800	G	98%	2%	0%	0%	0%	0%	C	0.106	0.555	9300	G	2017
(3) Givens Lane	1.57	1300	G	98%	1%	0%	0%	0%	0%	C	0.104	0.5	1300	G	2017
(4) Progress St	0.64	3800	G	98%	0%	1%	0%	0%	0%	F	0.09	0.529	4000	G	2017
(4) Progress St	0.51	1100	G	98%	0%	1%	0%	0%	0%	C	0.109	0.759	1200	G	2017
(4) Progress St	0.01	250	G	98%	0%	1%	0%	0%	0%	F	0.153	0.507	270	G	2017
(5) Clay St	0.92	2700	G	99%	0%	0%	0%	0%	0%	C	0.101	0.63	2900	G	2017
(3150) Airport Rd	0.23	5500	G	99%	0%	0%	0%	0%	0%	F	0.119	0.620	5800	G	2017
(3150) Country Club Dr	0.40	4300	G	99%	0%	0%	0%	0%	0%	C	0.119	0.620	4500	G	2017
(3151) Ellett Rd	0.71	5500	G	98%	1%	0%	0%	0%	0%	C	0.096	0.595	5800	G	2017
(3152) Prices Fork Rd	0.75	14000	G	98%	1%	1%	0%	0%	0%	C	0.133	0.509	15000	G	2017
(3152) Prices Fork Rd	0.36	17000	G	98%	1%	1%	0%	0%	0%	F	0.114	0.524	18000	G	2017
(3152) Prices Fork Rd	0.58	24000	G	98%	1%	1%	0%	0%	0%	F	0.1	0.558	26000	G	2017
(3153) Airport Rd	0.37	2000	G	98%	1%	1%	0%	0%	0%	C	0.129	0.629	2100	G	2017
(3154) Glade Rd	1.55	1100	G	98%	1%	1%	0%	0%	0%	C	0.111	0.61	1100	G	2017
(3154) Glade Rd	0.46	1500	G	99%	0%	1%	0%	0%	0%	C	0.103	0.584	1600	G	2017
(3154) Glade Rd	0.33	4500	G	99%	0%	1%	0%	0%	0%	F	0.104	0.65	4800	G	2017
(3156) Roanoke St	0.49	5100	G	98%	0%	2%	0%	0%	0%	C	0.1	0.568	5500	G	2017
(3156) Owen St	0.11	4400	G	98%	0%	2%	0%	0%	0%	C	0.104	0.567	4700	G	2017
(3156) Harding Ave	0.11	4600	G	97%	0%	2%	0%	0%	0%	C	0.105	0.587	4900	G	2017

Virginia Department of Transportation  
Traffic Engineering Division

2017

Annual Average Daily Traffic Volume Estimates By Section of Route  
Town of Blacksburg

Route	Length	AADT	QA	4Tire	Bus	Truck				QC	K Factor	Dir Factor	AAWDT	QW	Year
						2Axle	3+Axle	1Trail	2Trail						
<b>Town of Blacksburg</b>															
(3156) Harding Ave	0.66	3800	G	97%	0%	2%	0%	0%	0%	F	0.096	0.589	4000	G	2017
			From:	Cork Dr											
			To:	ECL Blacksburg											
(3159) Tom's Creek Rd	1.08	9400	G	98%	1%	0%	0%	1%	0%	C	0.093	0.502	10000	G	2017
			From:	Prices Fork Rd											
			To:	US 460											
(3164) Mt Tabor Rd	0.92	2900	G	98%	1%	0%	0%	0%	0%	C	0.101	0.569	3100	G	2017
			From:	US 460 Bus											
			To:	NCL Blacksburg											
(3165) Patrick Henry Dr	0.79	3800	G	99%	0%	0%	0%	0%	0%	C	0.117	0.527	4100	G	2017
			From:	Harding Ave											
			To:	Bus US 460											
(3165) Patrick Henry Dr	0.83	8900	G	99%	0%	0%	0%	0%	0%	F	0.098	0.522	9500	G	2017
			From:	Toms Creek Rd											
			To:	Progress St NW											
Alumni Mall	2800		G	88%	8%	3%	1%	1%	0%	C	0.106	0.512	2800	G	2017
			From:	Drillfield Dr											
			To:	Main St											
Apperson Dr	150		G								0.137	0.591	150	G	2017
			From:	Mason Drive											
			To:	Harding Avenue											
College Ave	NA			Otey St							NA			NA	
			To:	Draper Rd											
Commuter Lot Entrance	4100		G	99%	0%	1%	0%	0%	0%	C	0.119	0.82	4100	G	2017
			From:	Prices Fork Rd											
			To:	Commuter Lot											
Country Club Dr	640		G	98%	0%	2%	0%	0%	0%	C	0.151	0.51	640	G	2017
			From:	Dead End											
			To:	Airport Rd											
County Club Dr	4200		G	100%	0%	0%	0%	0%	0%	C	0.126	0.6	4200	G	2017
			From:	Draper Rd											
			To:	US 460 Main St											
Draper Rd	240		G								0.172		260	G	2017
			From:	Country Club Dr											
			To:	Airport Rd											
Drillfield Dr - In front of Price Hall	2300		G	95%	2%	2%	0%	0%	0%	C	0.114	0.921	2300	G	2017
			From:	West Campus Dr											
			To:	Kent St											
Drillfield Dr - In front of Williams Hall	NA			Stanger St							NA			NA	
			To:	West Campus Dr											
Duckpond Dr	6600		G	99%	0%	0%	1%	0%	0%	C	0.126	0.752	6600	G	2017
			From:	Southgate Dr											
			To:	Washington St											
Duckpond Dr	4700		G	99%	0%	0%	1%	0%	0%	C	0.098	0.517	4700	G	2017
			From:	Oak Ln											
			To:	West Campus Dr											
E Clay St	3200		G	99%	0%	0%	0%	0%	0%	F	0.084	0.589	3500	G	2017
			From:	C8US 460											
			To:	Dead End											
Edgewood Lane	290		G								0.102	0.607	290	G	2017
			From:	Preston Ave											
			To:	S Draper Rd											
Entrance to VT Inn & VT Visitor Ctr	4600		G	97%	0%	1%	3%	0%	0%	C	0.129	0.781	1600	G	2017
			From:	Prices Fork Rd											
			To:	Entrance Split											

Virginia Department of Transportation  
Traffic Engineering Division

2016  
Annual Average Daily Traffic Volume Estimates By Section of Route  
Town of Blacksburg

Route	Jurisdiction	Length	AADT	QA	4Tire	Bus	Truck			K Factor	Dir Factor	AAWDT	QW	
							2Axle	3+Axle	1Trail					
314 Southgate Dr	Town of Blacksburg (Maint: 60) To: 0.15 Mile E US 460	0.15	10000	G	98%	0%	0%	1%	0%	C	0.120	0.769	11000 G	
412 Prices Fork Rd	Town of Blacksburg	1.07	28000	F	97%	2%	0%	0%	1%	C	0.088	0.573	30000 F	
412 Prices Fork Rd	Town of Blacksburg	0.28	21000	F	97%	2%	0%	0%	1%	F	0.084	0.549	22000 F	
460	Town of Blacksburg (Maint: 60) To: Bus US 460	0.40	14000	F	91%	1%	1%	7%	0%	C	0.095	0.657	15000 F	
460	Town of Blacksburg (Maint: 60)	3.30	16000	F	90%	1%	1%	7%	0%	C	0.101	0.706	17000 F	
460	Town of Blacksburg (Maint: 60) To: SR 412 Prices Fork Rd	2.97	36000	F	95%	0%	1%	1%	3%	0%	C	0.103	0.547	38000 F
460	Town of Blacksburg (Maint: 60) To: SCL Blacksburg	0.72	41000	F	95%	0%	1%	1%	3%	0%	F	0.103	0.653	44000 F
Bus 460 Main St	Town of Blacksburg	0.29	17000	N	98%	0%	1%	0%	0%	N	0.091	0.593	18000 N	
Bus 460 Main St	Town of Blacksburg	1.01	5000	F	98%	0%	1%	1%	0%	C	0.1	0.57	5400 F	
Bus 460 Main St	Town of Blacksburg	0.87	7500	F	98%	1%	0%	0%	0%	C	0.098	0.636	8000 F	
Bus 460 Main St	Town of Blacksburg	0.44	15000	F	98%	1%	0%	0%	0%	F	0.081	0.562	16000 F	
Bus 460 Main St	Town of Blacksburg	0.26	16000	F	98%	1%	0%	0%	0%	F	0.082	0.534	17000 F	
Bus 460 Main St	Town of Blacksburg	0.17	17000	F	98%	1%	0%	0%	0%	F	0.081	0.513	18000 F	
Bus 460 Main St	Town of Blacksburg	0.53	18000	F	98%	1%	0%	0%	0%	F	0.076	0.521	20000 F	
Bus 460 Main St	Town of Blacksburg	0.19	17000	F	98%	1%	1%	0%	0%	F	0.077	0.508	18000 F	

**Peggy Malone & Associates**  
**(800) 247-8602**

File Name : 2-Progress St and Patrick Henry WED AM  
Site Code :  
Start Date : 4/4/2018  
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Groups Printed- Car

Start Time	Progress St Southbound					Patrick Henry Dr Westbound					Progress St Northbound					Patrick Henry Dr Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
08:00 AM	6	6	1	3	16	0	41	0	0	41	6	2	3	0	11	5	39	3	0	47	115
08:15 AM	7	7	3	0	17	0	49	0	0	49	1	1	2	3	7	3	33	3	0	39	112
08:30 AM	15	12	3	1	31	0	62	8	0	70	2	1	6	2	11	4	35	0	4	43	155
08:45 AM	19	11	2	0	32	0	85	5	1	91	3	3	4	2	12	3	51	1	1	56	191
Total	47	36	9	4	96	0	237	13	1	251	12	7	15	7	41	15	158	7	5	185	573
09:00 AM	9	5	2	0	16	3	51	2	0	56	2	5	6	1	14	4	46	3	0	53	139
09:15 AM	13	2	2	0	17	0	34	3	0	37	5	5	3	2	15	7	37	7	0	51	120
09:30 AM	8	0	0	0	8	1	46	4	0	51	4	0	3	2	9	4	43	3	1	51	119
09:45 AM	4	1	2	0	7	2	66	2	0	70	3	3	2	2	10	3	47	7	0	57	144
Total	34	8	6	0	48	6	197	11	0	214	14	13	14	7	48	18	173	20	1	212	522
Grand Total	81	44	15	4	144	6	434	24	1	465	26	20	29	14	89	33	331	27	6	397	1095
Apprch %	56.2	30.6	10.4	2.8		1.3	93.3	5.2	0.2		29.2	22.5	32.6	15.7		8.3	83.4	6.8	1.5		
Total %	7.4	4	1.4	0.4	13.2	0.5	39.6	2.2	0.1	42.5	2.4	1.8	2.6	1.3	8.1	3	30.2	2.5	0.5	36.3	

Start Time	Progress St Southbound				Patrick Henry Dr Westbound				Progress St Northbound				Patrick Henry Dr Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 08:00 AM to 09:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:30 AM																	
08:30 AM	15	12	3	30	0	62	8	70	2	1	6	9	4	35	0	39	148
08:45 AM	19	11	2	32	0	85	5	90	3	3	4	10	3	51	1	55	187
09:00 AM	9	5	2	16	3	51	2	56	2	5	6	13	4	46	3	53	138
09:15 AM	13	2	2	17	0	34	3	37	5	5	3	13	7	37	7	51	118
Total Volume	56	30	9	95	3	232	18	253	12	14	19	45	18	169	11	198	591
% App. Total	58.9	31.6	9.5		1.2	91.7	7.1		26.7	31.1	42.2		9.1	85.4	5.6		
PHF	.737	.625	.750	.742	.250	.682	.563	.703	.600	.700	.792	.865	.643	.828	.393	.900	.790

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File Name : 2-Progress St and Patrick Henry WED AM  
Site Code :  
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Groups Printed- Truck

Start Time	Progress St Southbound					Patrick Henry Dr Westbound					Progress St Northbound					Patrick Henry Dr Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
08:00 AM	0	0	0	0	0	0	0	2	0	2	0	0	2	0	2	2	2	0	0	4	8
08:15 AM	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	3	1	0	0	5	7
08:30 AM	0	2	0	0	2	0	1	2	0	3	0	0	2	0	2	2	0	0	0	2	9
08:45 AM	0	0	0	0	0	0	2	2	0	4	0	0	1	0	1	1	2	0	0	0	8
Total	0	2	0	0	2	0	3	7	0	10	0	0	6	0	6	6	7	1	0	14	32
09:00 AM	0	0	0	0	0	0	2	2	0	4	0	0	2	0	2	2	0	1	0	3	9
09:15 AM	0	0	0	0	0	0	3	1	0	4	0	0	1	0	1	1	1	0	0	2	7
09:30 AM	0	0	0	0	0	0	0	2	0	2	0	0	2	0	2	2	1	0	0	3	7
09:45 AM	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	2	1	1	0	4	6
Total	0	0	0	0	0	0	5	6	0	11	0	0	6	0	6	7	3	2	0	12	29
Grand Total	0	2	0	0	2	0	8	13	0	21	0	0	12	0	12	13	10	3	0	26	61
Apprch %	0	100	0	0	0	0	38.1	61.9	0	0	0	0	100	0	0	50	38.5	11.5	0	0	
Total %	0	3.3	0	0	3.3	0	13.1	21.3	0	34.4	0	0	19.7	0	0	19.7	21.3	16.4	4.9	0	42.6

Start Time	Progress St Southbound					Patrick Henry Dr Westbound					Progress St Northbound					Patrick Henry Dr Eastbound					Int. Total
	Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Int. Total
Peak Hour Analysis From 08:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:15 AM																					
08:15 AM	0	0	0	0	0	0	0	1	1	1	0	0	1	1	1	3	1	5	7		
08:30 AM	0	2	0	2	2	0	1	2	3	0	0	2	2	2	0	0	0	2	9		
08:45 AM	0	0	0	0	0	0	2	2	4	0	0	1	1	1	1	2	0	3	8		
09:00 AM	0	0	0	0	0	0	2	2	4	0	0	2	2	2	0	1	1	3	9		
Total Volume	0	2	0	2		0	5	7	12		0	0	6	6	6	5	2	13	33		
% App. Total	0	100	0	0		0	41.7	58.3			0	0	100	46.2	38.5	15.4					
PHF	.000	.250	.000	.250		.000	.625	.875	.750		.000	.000	.750	.750	.750	.417	.500	.650	.917		

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File Name : 2-Progress St and Patrick Henry WED AM  
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Groups Printed- Combined

Start Time	Progress St Southbound					Patrick Henry Dr Westbound					Progress St Northbound					Patrick Henry Dr Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
08:00 AM	6	6	1	3	16	0	41	2	0	43	6	2	5	0	13	7	41	3	0	51	123
08:15 AM	7	7	3	0	17	0	49	1	0	50	1	1	3	3	8	4	36	4	0	44	119
08:30 AM	15	14	3	1	33	0	63	10	0	73	2	1	8	2	13	6	35	0	4	45	164
08:45 AM	19	11	2	0	32	0	87	7	1	95	3	3	5	2	13	4	53	1	1	59	199
Total	47	38	9	4	98	0	240	20	1	261	12	7	21	7	47	21	165	8	5	199	605
09:00 AM	9	5	2	0	16	3	53	4	0	60	2	5	8	1	16	6	46	4	0	56	148
09:15 AM	13	2	2	0	17	0	37	4	0	41	5	5	4	2	16	8	38	7	0	53	127
09:30 AM	8	0	0	0	8	1	46	6	0	53	4	0	5	2	11	6	44	3	1	54	126
09:45 AM	4	1	2	0	7	2	66	3	0	71	3	3	3	2	11	5	48	8	0	61	150
Total	34	8	6	0	48	6	202	17	0	225	14	13	20	7	54	25	176	22	1	224	551
Grand Total	81	46	15	4	146	6	442	37	1	486	26	20	41	14	101	46	341	30	6	423	1156
Apprch %	55.5	31.5	10.3	2.7		1.2	90.9	7.6	0.2		25.7	19.8	40.6	13.9		10.9	80.6	7.1	1.4		
Total %	7	4	1.3	0.3	12.6	0.5	38.2	3.2	0.1	42	2.2	1.7	3.5	1.2	8.7	4	29.5	2.6	0.5	36.6	

Start Time	Progress St Southbound					Patrick Henry Dr Westbound					Progress St Northbound					Patrick Henry Dr Eastbound					
	Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		
Peak Hour Analysis From 08:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:30 AM																					
08:30 AM	15	14	3	32		0	63	10	73		2	1	8	11		6	35	0	41		157
08:45 AM	19	11	2	32		0	87	7	94		3	3	5	11		4	53	1	58		195
09:00 AM	9	5	2	16		3	53	4	60		2	5	8	15		6	46	4	56		147
09:15 AM	13	2	2	17		0	37	4	41		5	5	4	14		8	38	7	53		125
Total Volume	56	32	9	97		3	240	25	268		12	14	25	51		24	172	12	208		624
% App. Total	57.7	33	9.3			1.1	89.6	9.3			23.5	27.5	49			11.5	82.7	5.8			
PHF	.737	.571	.750	.758		.250	.690	.625	.713		.600	.700	.781	.850		.750	.811	.429	.897		.800

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File Name : 2-Progress St and Patrick Henry WED PM  
Site Code :  
Start Date : 4/4/2018  
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Groups Printed- Car

Start Time	Progress St Southbound					Patrick Henry Dr Westbound					Progress St Northbound					Patrick Henry Dr Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:30 PM	3	2	0	1	6	4	71	10	0	85	10	3	12	0	25	3	71	6	1	81	197
04:45 PM	3	3	1	1	8	4	80	12	1	97	9	1	9	3	22	8	63	8	1	80	207
Total	6	5	1	2	14	8	151	22	1	182	19	4	21	3	47	11	134	14	2	161	404
05:00 PM	1	3	2	0	6	1	105	16	0	122	7	7	17	2	33	8	55	6	0	69	230
05:15 PM	8	1	1	4	14	4	83	8	0	95	20	10	15	0	45	14	117	15	2	148	302
05:30 PM	8	4	0	1	13	3	108	12	1	124	19	6	16	2	43	7	92	15	0	114	294
05:45 PM	3	3	1	0	7	4	87	10	1	102	10	12	11	3	36	15	86	24	1	126	271
Total	20	11	4	5	40	12	383	46	2	443	56	35	59	7	157	44	350	60	3	457	1097
06:00 PM	5	3	3	2	13	2	72	7	0	81	9	8	11	0	28	11	98	14	1	124	246
06:15 PM	3	3	1	0	7	3	77	9	1	90	10	3	9	2	24	15	71	7	1	94	215
Grand Total	34	22	9	9	74	25	683	84	4	796	94	50	100	12	256	81	653	95	7	836	1962
Apprch %	45.9	29.7	12.2	12.2		3.1	85.8	10.6	0.5		36.7	19.5	39.1	4.7		9.7	78.1	11.4	0.8		
Total %	1.7	1.1	0.5	0.5	3.8	1.3	34.8	4.3	0.2	40.6	4.8	2.5	5.1	0.6	13	4.1	33.3	4.8	0.4	42.6	

Start Time	Progress St Southbound				Patrick Henry Dr Westbound				Progress St Northbound				Patrick Henry Dr Eastbound				
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:15 PM																	
05:15 PM	8	1	1	10	4	83	8	95	20	10	15	45	14	117	15	146	296
05:30 PM	8	4	0	12	3	108	12	123	19	6	16	41	7	92	15	114	290
05:45 PM	3	3	1	7	4	87	10	101	10	12	11	33	15	86	24	125	266
06:00 PM	5	3	3	11	2	72	7	81	9	8	11	28	11	98	14	123	243
Total Volume	24	11	5	40	13	350	37	400	58	36	53	147	47	393	68	508	1095
% App. Total	60	27.5	12.5		3.2	87.5	9.2		39.5	24.5	36.1		9.3	77.4	13.4		
PHF	.750	.688	.417	.833	.813	.810	.771	.813	.725	.750	.828	.817	.783	.840	.708	.870	.925

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File Name : 2-Progress St and Patrick Henry WED PM  
Site Code :  
Start Date : 4/4/2018  
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Groups Printed- Truck

Start Time	Progress St Southbound					Patrick Henry Dr Westbound					Progress St Northbound					Patrick Henry Dr Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:30 PM	1	0	0	0	1	0	1	1	0	2	0	0	2	0	2	2	1	0	0	3	8
04:45 PM	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	0	0	0	0	1	3
Total	1	0	0	0	1	0	1	2	0	3	0	0	3	0	3	1	0	0	4	11	
05:00 PM	0	0	0	0	0	0	0	1	0	1	0	0	3	0	3	2	0	0	0	2	6
05:15 PM	0	0	0	0	0	0	2	1	0	3	0	0	1	0	1	1	1	0	0	2	6
05:30 PM	0	0	0	0	0	0	1	1	0	2	0	0	2	0	2	1	0	0	0	1	5
05:45 PM	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	1	0	0	0	1	3
Total	0	0	0	0	0	0	3	4	0	7	0	0	7	0	7	5	1	0	0	6	20
06:00 PM	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	1	0	0	0	1	3
06:15 PM	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	1	0	0	0	1	3
Grand Total	1	0	0	0	1	0	4	8	0	12	0	0	12	0	12	10	2	0	0	12	37
Apprch %	100	0	0	0	1	0	33.3	66.7	0	12	0	0	100	0	12	83.3	16.7	0	0	0	12
Total %	2.7	0	0	0	2.7	0	10.8	21.6	0	32.4	0	0	32.4	0	32.4	27	5.4	0	0	32.4	

Start Time	Progress St Southbound				Patrick Henry Dr Westbound				Progress St Northbound				Patrick Henry Dr Eastbound								
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total				
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	1	0	0	1	0	1	1	2	0	0	2	2	2	1	0	3	8				
04:45 PM	0	0	0	0	0	0	1	1	0	0	1	1	1	0	0	1	3				
05:00 PM	0	0	0	0	0	0	1	1	0	0	3	3	2	0	0	2	6				
05:15 PM	0	0	0	0	0	2	1	3	0	0	1	1	1	0	0	2	6				
Total Volume	1	0	0	1	0	3	4	7	0	0	7	7	6	2	0	8	23				
% App. Total	100	0	0	0	0	42.9	57.1	0	0	100	0	75	25	0	0	0	23				
PHF	.250	.000	.000	.250	.000	.375	1.00	.583	.000	.000	.583	.583	.750	.500	.000	.667	.719				

**Peggy Malone & Associates**  
**(800) 247-8602**

File Name : 2-Progress St and Patrick Henry WED PM  
Site Code :  
Start Date : 4/4/2018  
Page No : 1

Groups Printed- Combined

Start Time	Progress St Southbound					Patrick Henry Dr Westbound					Progress St Northbound					Patrick Henry Dr Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:30 PM	4	2	0	1	7	4	72	11	0	87	10	3	14	0	27	5	72	6	1	84	205
04:45 PM	3	3	1	1	8	4	80	13	1	98	9	1	10	3	23	9	63	8	1	81	210
Total	7	5	1	2	15	8	152	24	1	185	19	4	24	3	50	14	135	14	2	165	415
05:00 PM	1	3	2	0	6	1	105	17	0	123	7	7	20	2	36	10	55	6	0	71	236
05:15 PM	8	1	1	4	14	4	85	9	0	98	20	10	16	0	46	15	118	15	2	150	308
05:30 PM	8	4	0	1	13	3	109	13	1	126	19	6	18	2	45	8	92	15	0	115	299
05:45 PM	3	3	1	0	7	4	87	11	1	103	10	12	12	3	37	16	86	24	1	127	274
Total	20	11	4	5	40	12	386	50	2	450	56	35	66	7	164	49	351	60	3	463	1117
06:00 PM	5	3	3	2	13	2	72	8	0	82	9	8	12	0	29	12	98	14	1	125	249
06:15 PM	3	3	1	0	7	3	77	10	1	91	10	3	10	2	25	16	71	7	1	95	218
Grand Total	35	22	9	9	75	25	687	92	4	808	94	50	112	12	268	91	655	95	7	848	1999
Apprch %	46.7	29.3	12	12		3.1	85	11.4	0.5		35.1	18.7	41.8	4.5		10.7	77.2	11.2	0.8		
Total %	1.8	1.1	0.5	0.5	3.8	1.3	34.4	4.6	0.2	40.4	4.7	2.5	5.6	0.6	13.4	4.6	32.8	4.8	0.4	42.4	

	Progress St Southbound				Patrick Henry Dr Westbound				Progress St Northbound				Patrick Henry Dr Eastbound				Int. Total	
	Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 05:15 PM																		
05:15 PM	8	1	1	10	10	4	85	9	98	20	10	16	46	15	118	15	148	302
05:30 PM	8	4	0	12	12	3	109	13	125	19	6	18	43	8	92	15	115	295
05:45 PM	3	3	1	7	7	4	87	11	102	10	12	12	34	16	86	24	126	269
06:00 PM	5	3	3	11	11	2	72	8	82	9	8	12	29	12	98	14	124	246
Total Volume	24	11	5	40	40	13	353	41	407	58	36	58	152	51	394	68	513	1112
% App. Total	60	27.5	12.5			3.2	86.7	10.1		38.2	23.7	38.2		9.9	76.8	13.3		
PHF	.750	.688	.417	.833		.813	.810	.788	.814	.725	.750	.806	.826	.797	.835	.708	.867	.921

**Peggy Malone & Associates**  
**(800) 247-8602**

File Name : 2-Progress St and PPatrick Henry THU AM  
Site Code :  
Start Date : 4/5/2018  
Page No : 1

Groups Printed- Car

Start Time	Progress St Southbound					Patrick Henry Dr Westbound					Progress St Northbound					Patrick Henry Dr Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:30 AM	24	4	0	7	35	0	75	3	0	78	1	1	12	1	15	3	36	1	0	40	168
07:45 AM	24	1	0	1	26	1	54	5	1	61	7	0	2	1	10	5	46	5	0	56	153
Total	48	5	0	8	61	1	129	8	1	139	8	1	14	2	25	8	82	6	0	96	321
08:00 AM	8	6	3	1	18	0	53	3	0	56	5	3	5	0	13	7	40	5	0	52	139
08:15 AM	6	9	0	0	15	2	44	4	0	50	3	1	3	2	9	2	38	2	1	43	117
08:30 AM	15	8	1	0	24	1	67	2	0	70	2	1	6	1	10	6	44	3	0	53	157
08:45 AM	13	12	0	0	25	1	70	7	0	78	1	5	4	5	15	5	52	6	0	63	181
Total	42	35	4	1	82	4	234	16	0	254	11	10	18	8	47	20	174	16	1	211	594
09:00 AM	11	14	1	0	26	2	74	6	0	82	5	3	5	3	16	3	37	4	0	44	168
09:15 AM	5	3	0	0	8	0	59	5	1	65	2	2	7	0	11	3	39	5	2	49	133
09:30 AM	8	4	0	0	12	0	34	5	0	39	8	2	5	0	15	3	33	1	1	38	104
09:45 AM	11	3	2	1	17	2	34	6	1	43	4	1	4	0	9	3	41	5	0	49	118
Total	35	24	3	1	63	4	201	22	2	229	19	8	21	3	51	12	150	15	3	180	523
10:00 AM	10	5	2	2	19	2	43	6	0	51	6	4	4	0	14	4	31	6	2	43	127
10:15 AM	6	1	2	0	9	3	41	0	0	44	5	2	7	4	18	2	38	4	0	44	115
10:30 AM	3	0	1	0	4	1	54	7	0	62	7	0	7	2	16	8	41	9	2	60	142
10:45 AM	8	13	0	0	21	4	58	5	0	67	13	1	7	0	21	9	52	8	0	69	178
Total	27	19	5	2	53	10	196	18	0	224	31	7	25	6	69	23	162	27	4	216	562
11:00 AM	3	4	1	0	8	1	41	5	0	47	7	3	2	3	15	9	50	6	2	67	137
11:15 AM	7	1	0	0	8	1	45	5	0	51	6	3	3	1	13	4	45	5	0	54	126
Grand Total	162	88	13	12	275	21	846	74	3	944	82	32	83	23	220	76	663	75	10	824	2263
Apprch %	58.9	32	4.7	4.4		2.2	89.6	7.8	0.3		37.3	14.5	37.7	10.5		9.2	80.5	9.1	1.2		
Total %	7.2	3.9	0.6	0.5	12.2	0.9	37.4	3.3	0.1	41.7	3.6	1.4	3.7	1	9.7	3.4	29.3	3.3	0.4	36.4	

Start Time	Progress St Southbound					Patrick Henry Dr Westbound					Progress St Northbound					Patrick Henry Dr Eastbound					Int. Total
	Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Int. Total
Peak Hour Analysis From 07:30 AM to 11:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:30 AM																					
08:30 AM	15	8	1	24		1	67	2	70		2	1	6	9		6	44	3	53		156
08:45 AM	13	12	0	25		1	70	7	78		1	5	4	10		5	52	6	63		176
09:00 AM	11	14	1	26		2	74	6	82		5	3	5	13		3	37	4	44		165
09:15 AM	5	3	0	8		0	59	5	64		2	2	7	11		3	39	5	47		130
Total Volume	44	37	2	83		4	270	20	294		10	11	22	43		17	172	18	207		627
% App. Total	53	44.6	2.4			1.4	91.8	6.8			23.3	25.6	51.2			8.2	83.1	8.7			
PHF	.733	.661	.500	.798		.500	.912	.714	.896		.500	.550	.786	.827		.708	.827	.750	.821		.891

**Peggy Malone & Associates**  
**(800) 247-8602**

File Name : 2-Progress St and PPatrick Henry THU AM  
Site Code :  
Start Date : 4/5/2018  
Page No : 1

Groups Printed- Truck

Start Time	Progress St Southbound					Patrick Henry Dr Westbound					Progress St Northbound					Patrick Henry Dr Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:30 AM	1	0	0	0	1	0	0	3	0	3	0	0	2	0	2	2	2	0	0	4	10
07:45 AM	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	1	3	0	0	4	6
Total	1	0	0	0	1	0	0	4	0	4	0	0	3	0	3	3	5	0	0	8	16
08:00 AM	1	0	0	0	1	1	1	2	0	4	0	0	2	0	2	2	3	0	0	5	12
08:15 AM	0	0	0	0	0	0	1	1	0	2	0	0	2	0	2	2	1	1	0	4	8
<b>08:30 AM</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>12</b>
<b>08:45 AM</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>5</b>
Total	1	1	0	0	2	1	4	7	0	12	0	0	8	0	8	8	6	1	0	15	37
<b>09:00 AM</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>8</b>
<b>09:15 AM</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>6</b>	<b>9</b>
09:30 AM	0	0	0	0	0	0	1	2	0	3	0	0	2	0	2	2	1	1	0	4	9
09:45 AM	0	0	1	0	1	0	1	2	0	3	0	0	2	0	2	1	2	0	0	3	9
Total	0	0	1	0	1	0	2	7	0	9	0	0	8	0	8	7	8	2	0	17	35
10:00 AM	1	0	0	0	1	0	0	2	0	2	0	0	2	0	2	2	2	0	0	4	9
10:15 AM	0	0	0	0	0	0	2	1	0	3	1	0	1	0	2	1	2	1	0	4	9
10:30 AM	0	0	0	0	0	0	0	2	0	2	1	0	2	0	3	2	0	0	0	2	7
10:45 AM	0	0	0	0	0	0	1	1	0	2	0	0	1	0	1	1	1	1	0	3	6
Total	1	0	0	0	1	0	3	6	0	9	2	0	6	0	8	6	5	2	0	13	31
11:00 AM	1	0	0	0	1	0	0	2	0	2	0	0	2	0	2	2	0	0	0	2	7
11:15 AM	0	0	0	0	0	0	1	1	0	2	0	0	1	0	1	1	1	0	0	2	5
Grand Total	4	1	1	0	6	1	10	27	0	38	2	0	28	0	27	25	5	0	57	131	
Apprch %	66.7	16.7	16.7	0		2.6	26.3	71.1	0		6.7	0	93.3	0		47.4	43.9	8.8	0		
Total %	3.1	0.8	0.8	0	4.6	0.8	7.6	20.6	0	29	1.5	0	21.4	0	22.9	20.6	19.1	3.8	0	43.5	

Start Time	Progress St Southbound				Patrick Henry Dr Westbound				Progress St Northbound				Patrick Henry Dr Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 11:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	1	1	0	0	0	1	1	3	0	4	6
08:00 AM	1	0	0	1	1	1	2	4	0	0	2	2	2	3	0	5	12
08:15 AM	0	0	0	0	0	0	1	1	0	0	2	2	2	1	1	4	8
08:30 AM	0	1	0	1	0	2	2	4	0	0	3	3	3	1	0	4	12
Total Volume	1	1	0	2	1	4	6	11	0	0	8	8	8	1	17		38
% App. Total	50	50	0		9.1	36.4	54.5		0	0	100		47.1	47.1	5.9		
PHF	.250	.250	.000	.500	.250	.500	.750	.688	.000	.000	.667	.667	.667	.250	.850		.792

**Peggy Malone & Associates**  
**(800) 247-8602**

File Name : 2-Progress St and PPatrick Henry THU AM  
Site Code :  
Start Date : 4/5/2018  
Page No : 1

Groups Printed- Combined

Start Time	Progress St Southbound					Patrick Henry Dr Westbound					Progress St Northbound					Patrick Henry Dr Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:30 AM	25	4	0	7	36	0	75	6	0	81	1	1	14	1	17	5	38	1	0	44	178
07:45 AM	24	1	0	1	26	1	54	6	1	62	7	0	3	1	11	6	49	5	0	60	159
Total	49	5	0	8	62	1	129	12	1	143	8	1	17	2	28	11	87	6	0	104	337
08:00 AM	9	6	3	1	19	1	54	5	0	60	5	3	7	0	15	9	43	5	0	57	151
08:15 AM	6	9	0	0	15	2	45	5	0	52	3	1	5	2	11	4	39	3	1	47	125
08:30 AM	15	9	1	0	25	1	69	4	0	74	2	1	9	1	13	9	45	3	0	57	169
08:45 AM	13	12	0	0	25	1	70	9	0	80	1	5	5	5	16	6	53	6	0	65	186
Total	43	36	4	1	84	5	238	23	0	266	11	10	26	8	55	28	180	17	1	226	631
09:00 AM	11	14	1	0	26	2	74	8	0	84	5	3	7	3	18	5	39	4	0	48	176
09:15 AM	5	3	0	0	8	0	59	6	1	66	2	2	9	0	13	5	42	6	2	55	142
09:30 AM	8	4	0	0	12	0	35	7	0	42	8	2	7	0	17	5	34	2	1	42	113
09:45 AM	11	3	3	1	18	2	35	8	1	46	4	1	6	0	11	4	43	5	0	52	127
Total	35	24	4	1	64	4	203	29	2	238	19	8	29	3	59	19	158	17	3	197	558
10:00 AM	11	5	2	2	20	2	43	8	0	53	6	4	6	0	16	6	33	6	2	47	136
10:15 AM	6	1	2	0	9	3	43	1	0	47	6	2	8	4	20	3	40	5	0	48	124
10:30 AM	3	0	1	0	4	1	54	9	0	64	8	0	9	2	19	10	41	9	2	62	149
10:45 AM	8	13	0	0	21	4	59	6	0	69	13	1	8	0	22	10	53	9	0	72	184
Total	28	19	5	2	54	10	199	24	0	233	33	7	31	6	77	29	167	29	4	229	593
11:00 AM	4	4	1	0	9	1	41	7	0	49	7	3	4	3	17	11	50	6	2	69	144
11:15 AM	7	1	0	0	8	1	46	6	0	53	6	3	4	1	14	5	46	5	0	56	131
Grand Total	166	89	14	12	281	22	856	101	3	982	84	32	111	23	250	103	688	80	10	881	2394
Apprch %	59.1	31.7	5	4.3		2.2	87.2	10.3	0.3		33.6	12.8	44.4	9.2		11.7	78.1	9.1	1.1		
Total %	6.9	3.7	0.6	0.5	11.7	0.9	35.8	4.2	0.1	41	3.5	1.3	4.6	1	10.4	4.3	28.7	3.3	0.4	36.8	

Start Time	Progress St Southbound					Patrick Henry Dr Westbound					Progress St Northbound					Patrick Henry Dr Eastbound					Int. Total
	Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Int. Total
Peak Hour Analysis From 07:30 AM to 11:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:30 AM																					
08:30 AM	15	9	1	25		1	69	4	74		2	1	9	12		9	45	3	57		168
08:45 AM	13	12	0	25		1	70	9	80		1	5	5	11		6	53	6	65		181
09:00 AM	11	14	1	26		2	74	8	84		5	3	7	15		5	39	4	48		173
09:15 AM	5	3	0	8		0	59	6	65		2	2	9	13		5	42	6	53		139
Total Volume	44	38	2	84		4	272	27	303		10	11	30	51		25	179	19	223		661
% App. Total	52.4	45.2	2.4			1.3	89.8	8.9			19.6	21.6	58.8			11.2	80.3	8.5			
PHF	.733	.679	.500	.808		.500	.919	.750	.902		.500	.550	.833	.850		.694	.844	.792	.858		.913

**Peggy Malone & Associates**  
**(800) 247-8602**

File Name : 2-Progress St and PPatrick Henry THU PM  
Site Code :  
Start Date : 4/5/2018  
Page No : 1

Groups Printed- Car

Start Time	Progress St Southbound					Patrick Henry Dr Westbound					Progress St Northbound					Patrick Henry Dr Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	5	6	2	0	13	2	49	14	0	65	5	3	5	5	18	13	64	6	1	84	180
03:15 PM	8	4	2	0	14	0	71	11	0	82	10	5	8	3	26	9	56	8	1	74	196
03:30 PM	5	3	2	0	10	2	87	12	1	102	7	3	7	1	18	7	74	7	2	90	220
03:45 PM	3	2	2	2	9	6	94	3	0	103	9	9	14	5	37	9	74	7	0	90	239
Total	21	15	8	2	46	10	301	40	1	352	31	20	34	14	99	38	268	28	4	338	835
04:00 PM	3	4	4	0	11	2	86	7	0	95	12	1	10	0	23	11	56	10	1	78	207
04:15 PM	5	4	2	1	12	5	81	5	2	93	8	4	10	0	22	9	77	8	1	95	222
04:30 PM	10	5	1	1	17	4	94	9	0	107	10	4	12	2	28	14	71	4	0	89	241
Total	25	23	8	5	61	12	359	38	3	412	40	19	39	6	104	41	284	29	2	356	933
05:00 PM	5	3	0	0	8	5	110	11	0	126	21	6	15	7	49	18	94	8	0	120	303
05:15 PM	7	4	1	3	15	3	106	11	0	120	15	4	18	5	42	8	78	15	0	101	278
05:30 PM	6	4	4	1	15	4	97	10	1	112	16	9	16	2	43	12	98	15	1	126	296
Total	28	16	7	7	58	12	397	42	1	452	71	25	64	15	175	52	375	52	3	482	1167
06:00 PM	3	3	2	3	11	3	80	11	0	94	13	7	14	3	37	11	83	12	0	106	248
06:15 PM	10	4	0	0	14	5	74	13	0	92	16	9	11	0	36	10	63	11	0	84	226
06:30 PM	5	4	3	1	13	5	65	17	1	88	21	7	13	3	44	20	79	8	1	108	253
06:45 PM	7	3	3	1	14	2	62	10	0	74	9	7	12	1	29	9	85	13	2	109	226
Total	25	14	8	5	52	15	281	51	1	348	59	30	50	7	146	50	310	44	3	407	953
Grand Total	99	68	31	19	217	49	1338	171	6	1564	201	94	187	42	524	181	1237	153	12	1583	3888
Apprch %	45.6	31.3	14.3	8.8		3.1	85.5	10.9	0.4		38.4	17.9	35.7	8		11.4	78.1	9.7	0.8		
Total %	2.5	1.7	0.8	0.5	5.6	1.3	34.4	4.4	0.2	40.2	5.2	2.4	4.8	1.1	13.5	4.7	31.8	3.9	0.3	40.7	

Start Time	Progress St Southbound					Patrick Henry Dr Westbound					Progress St Northbound					Patrick Henry Dr Eastbound					Int. Total
	Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Int. Total
Peak Hour Analysis From 03:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	5	3	0	8		5	110	11	126		21	6	15	42		18	94	8	120		296
05:15 PM	7	4	1	12		3	106	11	120		15	4	18	37		8	78	15	101		270
05:30 PM	6	4	4	14		4	97	10	111		16	9	16	41		12	98	15	125		291
05:45 PM	10	5	2	17		0	84	10	94		19	6	15	40		14	105	14	133		284
Total Volume	28	16	7	51		12	397	42	451		71	25	64	160		52	375	52	479		1141
% App. Total	54.9	31.4	13.7			2.7	88	9.3			44.4	15.6	40			10.9	78.3	10.9			
PHF	.700	.800	.438	.750		.600	.902	.955	.895		.845	.694	.889	.952		.722	.893	.867	.900		.964

**Peggy Malone & Associates**  
**(800) 247-8602**

File Name : 2-Progress St and PPatrick Henry THU PM  
Site Code :  
Start Date : 4/5/2018  
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Groups Printed- Truck

Start Time	Progress St Southbound					Patrick Henry Dr Westbound					Progress St Northbound					Patrick Henry Dr Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	0	0	0	0	0	0	1	1	0	2	0	0	2	0	2	2	1	0	0	3	7
03:15 PM	1	1	0	0	2	0	2	2	0	4	0	0	1	0	1	1	1	1	0	3	10
03:30 PM	0	1	0	0	1	0	0	1	0	1	0	0	2	0	2	1	0	0	0	1	5
03:45 PM	0	0	0	0	0	0	1	1	0	2	1	1	1	0	3	3	0	0	0	3	8
Total	1	2	0	0	3	0	4	5	0	9	1	1	6	0	8	7	2	1	0	10	30
04:00 PM	0	0	0	0	0	0	1	1	0	2	1	1	2	0	4	2	1	0	0	3	9
04:15 PM	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	2	2	0	0	4	6
04:30 PM	0	0	0	0	0	1	0	1	0	2	1	0	3	0	4	3	1	0	0	4	10
04:45 PM	0	1	0	0	1	0	2	1	0	3	0	0	2	0	2	1	3	0	0	4	10
Total	0	1	0	0	1	1	3	4	0	8	2	1	8	0	11	8	7	0	0	15	35
05:00 PM	0	0	0	0	0	0	2	1	0	3	1	0	1	0	2	2	0	0	0	2	7
05:15 PM	0	0	0	0	0	0	2	1	0	3	0	0	3	0	3	2	0	0	0	2	8
05:30 PM	0	0	0	0	0	0	5	1	0	6	0	0	2	0	2	2	0	0	0	2	10
05:45 PM	0	0	0	0	0	0	2	1	0	3	0	0	2	0	2	1	0	0	0	1	6
Total	0	0	0	0	0	0	11	4	0	15	1	0	8	0	9	7	0	0	0	7	31
06:00 PM	0	0	0	0	0	0	0	1	0	1	0	0	2	0	2	1	0	0	0	1	4
06:15 PM	0	0	0	0	0	0	1	1	0	2	0	0	1	0	1	1	0	0	0	1	4
06:30 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	2	3
06:45 PM	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	0	2	0	0	2	5
Total	0	1	0	0	1	0	2	3	0	5	0	0	4	0	4	3	3	0	0	6	16
Grand Total	1	4	0	0	5	1	20	16	0	37	4	2	26	0	32	25	12	1	0	38	112
Apprch %	20	80	0	0	2.7	54.1	43.2	0	12.5	6.2	81.2	0	65.8	31.6	2.6	0	0	0	0	0	
Total %	0.9	3.6	0	0	4.5	0.9	17.9	14.3	0	33	3.6	1.8	23.2	0	28.6	22.3	10.7	0.9	0	33.9	

Start Time	Progress St Southbound					Patrick Henry Dr Westbound					Progress St Northbound					Patrick Henry Dr Eastbound				
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total
<b>Peak Hour Analysis From 03:00 PM to 06:45 PM - Peak 1 of 1</b>																				
<b>Peak Hour for Entire Intersection Begins at 04:00 PM</b>																				
04:00 PM	0	0	0	0	0	0	1	1	2	1	1	2	4	2	1	0	3	9		
04:15 PM	0	0	0	0	0	0	0	1	1	0	0	1	1	2	2	0	4	6		
04:30 PM	0	0	0	0	0	1	0	1	2	1	0	3	4	3	1	0	4	10		
04:45 PM	0	1	0	1	1	0	2	1	3	0	0	2	2	1	3	0	4	10		
Total Volume	0	1	0	1	1	1	3	4	8	2	1	8	11	8	7	0	15	35		
% App. Total	0	100	0	0	12.5	37.5	50	18.2	9.1	72.7	53.3	46.7	0	53.3	46.7	0	0	0	0	
PHF	.000	.250	.000	.250	.250	.375	1.00	.667	.500	.250	.667	.688	.667	.583	.000	.938	.875			

**Peggy Malone & Associates**  
**(800) 247-8602**

File Name : 2-Progress St and PPatrick Henry THU PM  
Site Code :  
Start Date : 4/5/2018  
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Groups Printed- Combined

Start Time	Progress St Southbound					Patrick Henry Dr Westbound					Progress St Northbound					Patrick Henry Dr Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	5	6	2	0	13	2	50	15	0	67	5	3	7	5	20	15	65	6	1	87	187
03:15 PM	9	5	2	0	16	0	73	13	0	86	10	5	9	3	27	10	57	9	1	77	206
03:30 PM	5	4	2	0	11	2	87	13	1	103	7	3	9	1	20	8	74	7	2	91	225
03:45 PM	3	2	2	2	9	6	95	4	0	105	10	10	15	5	40	12	74	7	0	93	247
Total	22	17	8	2	49	10	305	45	1	361	32	21	40	14	107	45	270	29	4	348	865
04:00 PM	3	4	4	0	11	2	87	8	0	97	13	2	12	0	27	13	57	10	1	81	216
04:15 PM	5	4	2	1	12	5	81	6	2	94	8	4	11	0	23	11	79	8	1	99	228
04:30 PM	10	5	1	1	17	5	94	10	0	109	11	4	15	2	32	17	72	4	0	93	251
04:45 PM	7	11	1	3	22	1	100	18	1	120	10	10	9	4	33	8	83	7	0	98	273
Total	25	24	8	5	62	13	362	42	3	420	42	20	47	6	115	49	291	29	2	371	968
05:00 PM	5	3	0	0	8	5	112	12	0	129	22	6	16	7	51	20	94	8	0	122	310
05:15 PM	7	4	1	3	15	3	108	12	0	123	15	4	21	5	45	10	78	15	0	103	286
05:30 PM	6	4	4	1	15	4	102	11	1	118	16	9	18	2	45	14	98	15	1	128	306
05:45 PM	10	5	2	3	20	0	86	11	0	97	19	6	17	1	43	15	105	14	2	136	296
Total	28	16	7	7	58	12	408	46	1	467	72	25	72	15	184	59	375	52	3	489	1198
06:00 PM	3	3	2	3	11	3	80	12	0	95	13	7	16	3	39	12	83	12	0	107	252
06:15 PM	10	4	0	0	14	5	75	14	0	94	16	9	12	0	37	11	63	11	0	85	230
06:30 PM	5	4	3	1	13	5	65	18	1	89	21	7	13	3	44	21	80	8	1	110	256
06:45 PM	7	4	3	1	15	2	63	10	0	75	9	7	13	1	30	9	87	13	2	111	231
Total	25	15	8	5	53	15	283	54	1	353	59	30	54	7	150	53	313	44	3	413	969
Grand Total	100	72	31	19	222	50	1358	187	6	1601	205	96	213	42	556	206	1249	154	12	1621	4000
Apprch %	45	32.4	14	8.6		3.1	84.8	11.7	0.4		36.9	17.3	38.3	7.6		12.7	77.1	9.5	0.7		
Total %	2.5	1.8	0.8	0.5	5.6	1.2	34	4.7	0.2	40	5.1	2.4	5.3	1	13.9	5.2	31.2	3.8	0.3	40.5	

Start Time	Progress St Southbound					Patrick Henry Dr Westbound					Progress St Northbound					Patrick Henry Dr Eastbound					Int. Total
	Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Int. Total
Peak Hour Analysis From 03:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	5	3	0	8		5	112	12	129		22	6	16	44		20	94	8	122		303
05:15 PM	7	4	1	12		3	108	12	123		15	4	21	40		10	78	15	103		278
05:30 PM	6	4	4	14		4	102	11	117		16	9	18	43		14	98	15	127		301
05:45 PM	10	5	2	17		0	86	11	97		19	6	17	42		15	105	14	134		290
Total Volume	28	16	7	51		12	408	46	466		72	25	72	169		59	375	52	486		1172
% App. Total	54.9	31.4	13.7			2.6	87.6	9.9			42.6	14.8	42.6			12.1	77.2	10.7			
PHF	.700	.800	.438	.750		.600	.911	.958	.903		.818	.694	.857	.960		.738	.893	.867	.907		.967

**Peggy Malone & Associates**  
**(888) 247-8602**

File Name : N Main St and Patrick Henry Dr WED AM  
Site Code :  
Start Date : 9/19/2018  
Page No : 1

Groups Printed- Car

Start Time	N. Main Southbound					Patrick Henry Westbound					N. Main Northbound					Patrick Henry Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:30 AM	31	155	9	0	195	6	22	21	0	49	2	17	4	3	26	28	10	16	2	56	326
07:45 AM	32	109	10	1	152	7	15	16	1	39	10	21	13	3	47	18	19	18	0	55	293
Total	63	264	19	1	347	13	37	37	1	88	12	38	17	6	73	46	29	34	2	111	619
08:00 AM	21	91	9	1	122	11	23	11	0	45	4	26	6	2	38	14	22	21	2	59	264
08:15 AM	24	104	11	1	140	7	18	18	1	44	7	28	9	1	45	16	15	14	1	46	275
08:30 AM	29	140	8	1	178	6	22	11	0	39	8	32	13	7	60	38	17	20	1	76	353
08:45 AM	26	120	15	0	161	5	27	17	2	51	7	43	11	7	68	17	21	22	0	60	340
Total	100	455	43	3	601	29	90	57	3	179	26	129	39	17	211	85	75	77	4	241	1232
09:00 AM	35	98	9	3	145	13	16	12	0	41	9	65	13	2	89	15	18	13	1	47	322
09:15 AM	23	72	13	0	108	13	20	15	3	51	7	39	15	6	67	14	12	23	1	50	276
09:30 AM	19	89	6	1	115	7	17	12	2	38	7	42	10	9	68	20	13	16	4	53	274
09:45 AM	23	108	10	0	141	10	25	8	1	44	2	35	12	3	52	31	19	13	1	64	301
Total	100	367	38	4	509	43	78	47	6	174	25	181	50	20	276	80	62	65	7	214	1173
10:00 AM	12	47	9	3	71	5	22	7	0	34	9	41	29	3	82	25	12	8	0	45	232
10:15 AM	27	59	6	3	95	10	20	12	0	42	12	36	17	2	67	20	17	18	2	57	261
10:30 AM	19	61	8	2	90	5	18	10	0	33	8	40	12	11	71	13	25	14	1	53	247
10:45 AM	13	83	8	0	104	5	29	11	1	46	5	40	23	9	77	32	14	15	0	61	288
Total	71	250	31	8	360	25	89	40	1	155	34	157	81	25	297	90	68	55	3	216	1028
11:00 AM	14	61	5	2	82	6	29	5	2	42	9	51	26	2	88	19	10	11	0	40	252
11:15 AM	34	82	7	0	123	11	15	9	0	35	12	49	34	5	100	18	17	25	0	60	318
Grand Total	382	1479	143	18	2022	127	338	195	13	673	118	605	247	75	1045	338	261	267	16	882	4622
Apprch %	18.9	73.1	7.1	0.9		18.9	50.2	29	1.9		11.3	57.9	23.6	7.2		38.3	29.6	30.3	1.8		
Total %	8.3	32	3.1	0.4	43.7	2.7	7.3	4.2	0.3	14.6	2.6	13.1	5.3	1.6	22.6	7.3	5.6	5.8	0.3	19.1	

Start Time	N. Main Southbound					Patrick Henry Westbound					N. Main Northbound					Patrick Henry Eastbound					
	Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Int. Total
Peak Hour Analysis From 07:30 AM to 11:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:15 AM																					
08:15 AM	24	104	11	139		7	18	<b>18</b>	43		7	28	9	44		16	15	14	45		271
08:30 AM	29	<b>140</b>	8	<b>177</b>		6	22	11	39		8	32	<b>13</b>	53		<b>38</b>	17	20	<b>75</b>		344
08:45 AM	26	120	<b>15</b>	161		5	<b>27</b>	17	<b>49</b>		7	43	11	61		17	<b>21</b>	<b>22</b>	60		331
09:00 AM	<b>35</b>	98	9	142		<b>13</b>	16	12	41		<b>9</b>	<b>65</b>	13	<b>87</b>		15	18	13	46		316
Total Volume	114	462	43	619		31	83	58	172		31	168	46	245		86	71	69	226		1262
% App. Total	18.4	74.6	6.9			18	48.3	33.7			12.7	68.6	18.8			38.1	31.4	30.5			
PHF	.814	.825	.717	.874		.596	.769	.806	.878		.861	.646	.885	.704		.566	.845	.784	.753		.917

**Peggy Malone & Associates**  
**(888) 247-8602**

File Name : N Main St and Patrick Henry Dr WED AM  
Site Code :  
Start Date : 9/19/2018  
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Groups Printed- Truck

Start Time	N. Main Southbound					Patrick Henry Westbound					N. Main Northbound					Patrick Henry Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:30 AM	1	4	0	0	5	0	2	2	0	4	0	1	0	0	1	0	0	1	0	1	11
07:45 AM	0	3	1	0	4	0	1	0	0	1	1	2	1	0	4	0	1	1	0	2	11
Total	1	7	1	0	9	0	3	2	0	5	1	3	1	0	5	0	1	2	0	3	22
08:00 AM	1	0	1	0	2	1	3	0	0	4	0	3	0	0	3	0	0	0	0	0	9
08:15 AM	0	2	1	0	3	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	6
08:30 AM	1	1	0	0	2	0	2	0	0	2	1	1	1	0	3	0	0	0	0	0	7
08:45 AM	1	2	1	0	4	0	1	0	0	1	0	2	0	0	2	0	0	3	0	3	10
Total	3	5	3	0	11	1	7	0	0	8	1	7	1	0	9	0	0	4	0	4	32
09:00 AM	2	3	0	0	5	0	3	0	0	3	0	2	0	0	2	1	0	0	0	1	11
09:15 AM	0	1	0	0	1	0	4	0	0	4	0	1	0	0	1	0	0	1	0	1	7
09:30 AM	2	2	1	0	5	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	8
09:45 AM	0	3	0	0	3	2	2	0	0	4	0	1	1	0	2	0	1	2	0	3	12
Total	4	9	1	0	14	2	11	0	0	13	0	5	1	0	6	1	1	3	0	5	38
10:00 AM	4	2	0	0	6	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	8
10:15 AM	1	1	0	0	2	0	2	0	0	2	0	4	1	0	5	0	0	2	0	2	11
10:30 AM	1	2	0	0	3	0	2	0	0	2	0	2	0	0	2	1	0	0	0	1	8
10:45 AM	0	2	0	0	2	0	1	0	0	1	2	2	0	0	4	0	1	1	0	2	9
Total	6	7	0	0	13	0	6	0	0	6	2	9	1	0	12	1	1	3	0	5	36
11:00 AM	1	2	0	0	3	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	6
11:15 AM	0	1	0	0	1	1	2	0	0	3	0	1	1	0	2	0	1	1	0	2	8
Grand Total	15	31	5	0	51	4	31	2	0	37	4	26	5	0	35	2	4	13	0	0	142
Apprch %	29.4	60.8	9.8	0	10.8	83.8	5.4	0	11.4	74.3	14.3	0	10.5	21.1	68.4	0					
Total %	10.6	21.8	3.5	0	35.9	2.8	21.8	1.4	0	26.1	2.8	18.3	3.5	0	24.6	1.4	2.8	9.2	0	13.4	

Start Time	N. Main Southbound					Patrick Henry Westbound					N. Main Northbound					Patrick Henry Eastbound					
	Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		
Peak Hour Analysis From 07:30 AM to 11:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 09:30 AM																					
09:30 AM	2	2	1	5		0	2	0	2		0	1	0	1		0	0	0	0		8
09:45 AM	0	3	0	3		2	2	0	4		0	1	1	2		1	2	3			12
10:00 AM	4	2	0	6		0	1	0	1		0	1	0	1		0	0	0	0		8
10:15 AM	1	1	0	2		0	2	0	2		0	4	1	5		0	0	2	2		11
Total Volume	7	8	1	16		2	7	0	9		0	7	2	9		0	1	4	5		39
% App. Total	43.8	50	6.2			22.2	77.8	0			0	77.8	22.2			0	20	80			
PHF	.438	.667	.250	.667		.250	.875	.000	.563		.000	.438	.500	.450		.000	.250	.500	.417		.813

**Peggy Malone & Associates**  
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Groups Printed- Combined

Start Time	N. Main Southbound					Patrick Henry Westbound					N. Main Northbound					Patrick Henry Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:30 AM	32	159	9	0	200	6	24	23	0	53	2	18	4	3	27	28	10	17	2	57	337
07:45 AM	32	112	11	1	156	7	16	16	1	40	11	23	14	3	51	18	20	19	0	57	304
Total	64	271	20	1	356	13	40	39	1	93	13	41	18	6	78	46	30	36	2	114	641
08:00 AM	22	91	10	1	124	12	26	11	0	49	4	29	6	2	41	14	22	21	2	59	273
08:15 AM	24	106	12	1	143	7	19	18	1	45	7	29	9	1	46	16	15	15	1	47	281
08:30 AM	30	141	8	1	180	6	24	11	0	41	9	33	14	7	63	38	17	20	1	76	360
08:45 AM	27	122	16	0	165	5	28	17	2	52	7	45	11	7	70	17	21	25	0	63	350
Total	103	460	46	3	612	30	97	57	3	187	27	136	40	17	220	85	75	81	4	245	1264
09:00 AM	37	101	9	3	150	13	19	12	0	44	9	67	13	2	91	16	18	13	1	48	333
09:15 AM	23	73	13	0	109	13	24	15	3	55	7	40	15	6	68	14	12	24	1	51	283
09:30 AM	21	91	7	1	120	7	19	12	2	40	7	43	10	9	69	20	13	16	4	53	282
09:45 AM	23	111	10	0	144	12	27	8	1	48	2	36	13	3	54	31	20	15	1	67	313
Total	104	376	39	4	523	45	89	47	6	187	25	186	51	20	282	81	63	68	7	219	1211
10:00 AM	16	49	9	3	77	5	23	7	0	35	9	42	29	3	83	25	12	8	0	45	240
10:15 AM	28	60	6	3	97	10	22	12	0	44	12	40	18	2	72	20	17	20	2	59	272
10:30 AM	20	63	8	2	93	5	20	10	0	35	8	42	12	11	73	14	25	14	1	54	255
10:45 AM	13	85	8	0	106	5	30	11	1	47	7	42	23	9	81	32	15	16	0	63	297
Total	77	257	31	8	373	25	95	40	1	161	36	166	82	25	309	91	69	58	3	221	1064
11:00 AM	15	63	5	2	85	6	31	5	2	44	9	52	26	2	89	19	10	11	0	40	258
11:15 AM	34	83	7	0	124	12	17	9	0	38	12	50	35	5	102	18	18	26	0	62	326
Grand Total	397	1510	148	18	2073	131	369	197	13	710	122	631	252	75	1080	340	265	280	16	901	4764
Apprch %	19.2	72.8	7.1	0.9		18.5	52	27.7	1.8		11.3	58.4	23.3	6.9		37.7	29.4	31.1	1.8		
Total %	8.3	31.7	3.1	0.4	43.5	2.7	7.7	4.1	0.3	14.9	2.6	13.2	5.3	1.6	22.7	7.1	5.6	5.9	0.3	18.9	

Start Time	N. Main Southbound				Patrick Henry Westbound				N. Main Northbound				Patrick Henry Eastbound								
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total				
Peak Hour Analysis From 07:30 AM to 11:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:15 AM																					
08:15 AM	24	106	12	142	7	19	<b>18</b>	44	7	29	9	45	16	15	15	46	277				
08:30 AM	30	<b>141</b>	8	<b>179</b>	6	24	11	41	<b>9</b>	33	<b>14</b>	56	<b>38</b>	17	20	<b>75</b>	<b>351</b>				
08:45 AM	27	122	<b>16</b>	165	5	<b>28</b>	17	<b>50</b>	7	45	11	63	17	<b>21</b>	<b>25</b>	63	341				
09:00 AM	<b>37</b>	101	9	147	<b>13</b>	19	12	44	9	<b>67</b>	13	<b>89</b>	16	18	13	47	327				
Total Volume	118	470	45	633	31	90	58	179	32	174	47	253	87	71	73	231	1296				
% App. Total	18.6	74.2	7.1		17.3	50.3	32.4		12.6	68.8	18.6		37.7	30.7	31.6						
PHF	.797	.833	.703	.884	.596	.804	.806	.895	.889	.649	.839	.711	.572	.845	.730	.770	.923				

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Groups Printed- Car

Start Time	N. Main Southbound					Patrick Henry Westbound					N. Main Northbound					Patrick Henry Eastbound						
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total	
03:00 PM	23	39	7	1	70	10	19	16	1	46	7	59	25	1	92	12	17	22	0	51	259	
03:15 PM	15	56	17	1	89	3	13	7	2	25	10	66	32	7	115	24	23	16	0	63	292	
03:30 PM	44	80	14	3	141	11	18	13	1	43	9	100	24	6	139	35	15	20	0	70	393	
03:45 PM	33	57	15	1	106	11	19	14	0	44	16	88	32	1	137	17	25	17	1	60	347	
Total	115	232	53	6	406	35	69	50	4	158	42	313	113	15	483	88	80	75	1	244	1291	
04:00 PM	47	65	15	1	128	14	24	13	1	52	9	97	35	4	145	17	33	23	1	74	399	
04:15 PM	25	53	10	3	91	7	23	10	3	43	11	68	22	1	102	22	18	23	0	63	299	
04:30 PM	46	73	14	5	138	5	22	6	2	35	8	83	24	0	115	26	26	20	0	72	360	
04:45 PM	25	70	20	2	117	11	28	12	1	52	23	93	29	1	146	40	31	16	0	87	402	
Total	143	261	59	11	474	37	97	41	7	182	51	341	110	6	508	105	108	82	1	296	1460	
05:00 PM	37	109	10	4	160	12	49	23	2	86	11	111	40	1	163	45	36	23	1	105	514	
05:15 PM	27	68	19	4	118	14	37	18	0	69	15	121	54	4	194	34	41	31	2	108	489	
05:30 PM	36	94	15	9	154	13	28	17	1	59	20	107	47	4	178	30	31	29	2	92	483	
05:45 PM	26	76	23	6	131	11	31	16	1	59	22	84	38	1	145	33	51	38	3	125	460	
Total	126	347	67	23	563	50	145	74	4	273	68	423	179	10	680	142	159	121	8	430	1946	
06:00 PM	20	60	10	2	92	12	27	16	0	55	21	93	33	3	150	27	33	22	1	83	380	
06:15 PM	30	53	11	3	97	10	22	13	1	46	21	71	28	0	120	38	34	23	0	95	358	
06:30 PM	18	76	13	2	109	8	27	31	0	66	18	89	28	1	136	32	30	20	2	84	395	
06:45 PM	21	66	18	2	107	8	36	15	0	59	14	77	48	0	139	52	29	23	2	106	411	
Total	89	255	52	9	405	38	112	75	1	226	74	330	137	4	545	149	126	88	5	368	1544	
Grand Total	473	1095	231	49	1848	160	423	240	16	839	235	1407	539	35	2216	484	473	366	15	1338	6241	
Apprch %	25.6	59.3	12.5	2.7		19.1	50.4	28.6	1.9		10.6	63.5	24.3	1.6		36.2	35.4	27.4	1.1			
Total %	7.6	17.5	3.7	0.8		29.6	2.6	6.8	3.8	0.3	13.4	3.8	22.5	8.6	0.6	35.5	7.8	7.6	5.9	0.2		21.4

Start Time	N. Main Southbound					Patrick Henry Westbound					N. Main Northbound					Patrick Henry Eastbound				
	Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total	
Peak Hour Analysis From 03:00 PM to 06:45 PM - Peak 1 of 1																				
Peak Hour for Entire Intersection Begins at 05:00 PM																				
05:00 PM	<b>37</b>	<b>109</b>	10	<b>156</b>		12	<b>49</b>	<b>23</b>	<b>84</b>		11	111	40	162	<b>45</b>	36	23	104		<b>506</b>
05:15 PM	27	68	19	114		<b>14</b>	37	18	69		15	<b>121</b>	<b>54</b>	<b>190</b>	34	41	31	106		479
05:30 PM	36	94	15	145		13	28	17	58		20	107	47	174	30	31	29	90		467
05:45 PM	26	76	<b>23</b>	125		11	31	16	58		<b>22</b>	84	38	144	33	<b>51</b>	<b>38</b>	<b>122</b>		449
Total Volume	126	347	67	540		50	145	74	269		68	423	179	670	142	159	121	422		1901
% App. Total	23.3	64.3	12.4			18.6	53.9	27.5			10.1	63.1	26.7		33.6	37.7	28.7			
PHF	.851	.796	.728	.865		.893	.740	.804	.801		.773	.874	.829	.882	.789	.779	.796	.865		.939

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Groups Printed- Truck

Start Time	N. Main Southbound					Patrick Henry Westbound					N. Main Northbound					Patrick Henry Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	2	2	0	0	4	0	2	0	0	2	3	2	0	0	5	0	1	0	0	1	12
03:15 PM	2	0	0	0	2	0	1	0	0	1	0	2	0	0	2	1	0	1	0	2	7
03:30 PM	1	2	0	0	3	0	1	0	0	1	0	2	0	0	2	0	0	1	0	1	7
03:45 PM	1	2	1	0	4	0	1	0	0	1	0	5	0	0	5	0	3	2	0	5	15
Total	6	6	1	0	13	0	5	0	0	5	3	11	0	0	14	1	4	4	0	9	41
04:00 PM	1	4	0	0	5	0	4	1	0	5	0	2	0	0	2	0	0	1	0	1	13
04:15 PM	0	3	0	0	3	0	2	1	0	3	1	2	0	0	3	0	0	2	0	2	11
04:30 PM	3	1	0	0	4	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	7
04:45 PM	0	3	0	0	3	0	3	0	0	3	0	2	0	0	2	0	0	1	0	1	9
Total	4	11	0	0	15	0	10	2	0	12	1	7	0	0	8	0	0	5	0	5	40
05:00 PM	2	2	0	0	4	0	3	1	0	4	0	2	0	0	2	0	0	0	0	0	10
05:15 PM	2	1	0	0	3	0	2	0	0	2	0	1	0	0	1	1	0	2	0	3	9
05:30 PM	1	1	1	0	3	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	5
05:45 PM	0	3	0	0	3	0	2	0	0	2	0	2	0	0	2	1	0	2	0	3	10
Total	5	7	1	0	13	0	8	1	0	9	0	6	0	0	6	2	0	4	0	6	34
06:00 PM	1	1	0	0	2	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	4
06:15 PM	1	0	0	0	1	0	1	0	0	1	0	1	1	0	2	0	0	1	0	1	5
06:30 PM	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
06:45 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	3	2	0	0	5	1	2	0	0	3	0	2	1	0	3	0	0	1	0	1	12
Grand Total	18	26	2	0	46	1	25	3	0	29	4	26	1	0	31	3	4	14	0	21	127
Apprch %	39.1	56.5	4.3	0	3.4	86.2	10.3	0	12.9	83.9	3.2	0	14.3	19	66.7	0	2.4	3.1	11	0	16.5
Total %	14.2	20.5	1.6	0	36.2	0.8	19.7	2.4	0	22.8	3.1	20.5	0.8	0	24.4	2.4	3.1	11	0	16.5	

Start Time	N. Main Southbound					Patrick Henry Westbound					N. Main Northbound					Patrick Henry Eastbound					
	Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Int. Total
Peak Hour Analysis From 03:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:30 PM																					
03:30 PM	1	2	0	3		0	1	0	1		0	2	0	2		0	0	1	1		7
03:45 PM	1	2	1	4		0	1	0	1		0	5	0	5		0	3	2	5		15
04:00 PM	1	4	0	5		0	4	1	5		0	2	0	2		0	0	1	1		13
04:15 PM	0	3	0	3		0	2	1	3		1	2	0	3		0	0	2	2		11
Total Volume	3	11	1	15		0	8	2	10		1	11	0	12		0	3	6	9		46
% App. Total	20	73.3	6.7			0	80	20			8.3	91.7	0	12		0	33.3	66.7			
PHF	.750	.688	.250	.750		.000	.500	.500	.500		.250	.550	.000	.600		.000	.250	.750	.450		.767

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Groups Printed- Combined

Start Time	N. Main Southbound					Patrick Henry Westbound					N. Main Northbound					Patrick Henry Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	25	41	7	1	74	10	21	16	1	48	10	61	25	1	97	12	18	22	0	52	271
03:15 PM	17	56	17	1	91	3	14	7	2	26	10	68	32	7	117	25	23	17	0	65	299
03:30 PM	45	82	14	3	144	11	19	13	1	44	9	102	24	6	141	35	15	21	0	71	400
03:45 PM	34	59	16	1	110	11	20	14	0	45	16	93	32	1	142	17	28	19	1	65	362
Total	121	238	54	6	419	35	74	50	4	163	45	324	113	15	497	89	84	79	1	253	1332
04:00 PM	48	69	15	1	133	14	28	14	1	57	9	99	35	4	147	17	33	24	1	75	412
04:15 PM	25	56	10	3	94	7	25	11	3	46	12	70	22	1	105	22	18	25	0	65	310
04:30 PM	49	74	14	5	142	5	23	6	2	36	8	84	24	0	116	26	26	21	0	73	367
04:45 PM	25	73	20	2	120	11	31	12	1	55	23	95	29	1	148	40	31	17	0	88	411
Total	147	272	59	11	489	37	107	43	7	194	52	348	110	6	516	105	108	87	1	301	1500
05:00 PM	39	111	10	4	164	12	52	24	2	90	11	113	40	1	165	45	36	23	1	105	524
05:15 PM	29	69	19	4	121	14	39	18	0	71	15	122	54	4	195	35	41	33	2	111	498
05:30 PM	37	95	16	9	157	13	29	17	1	60	20	108	47	4	179	30	31	29	2	92	488
05:45 PM	26	79	23	6	134	11	33	16	1	61	22	86	38	1	147	34	51	40	3	128	470
Total	131	354	68	23	576	50	153	75	4	282	68	429	179	10	686	144	159	125	8	436	1980
06:00 PM	21	61	10	2	94	12	28	16	0	56	21	94	33	3	151	27	33	22	1	83	384
06:15 PM	31	53	11	3	98	10	23	13	1	47	21	72	29	0	122	38	34	24	0	96	363
06:30 PM	19	77	13	2	111	8	27	31	0	66	18	89	28	1	136	32	30	20	2	84	397
06:45 PM	21	66	18	2	107	9	36	15	0	60	14	77	48	0	139	52	29	23	2	106	412
Total	92	257	52	9	410	39	114	75	1	229	74	332	138	4	548	149	126	89	5	369	1556
Grand Total	491	1121	233	49	1894	161	448	243	16	868	239	1433	540	35	2247	487	477	380	15	1359	6368
Apprch %	25.9	59.2	12.3	2.6		18.5	51.6	28	1.8		10.6	63.8	24	1.6		35.8	35.1	28	1.1		
Total %	7.7	17.6	3.7	0.8	29.7	2.5	7	3.8	0.3	13.6	3.8	22.5	8.5	0.5	35.3	7.6	7.5	6	0.2	21.3	

Start Time	N. Main Southbound					Patrick Henry Westbound					N. Main Northbound					Patrick Henry Eastbound					
	Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Int. Total
Peak Hour Analysis From 03:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	<b>39</b>	<b>111</b>	10	<b>160</b>		12	<b>52</b>	<b>24</b>	<b>88</b>		11	113	40	164		<b>45</b>	36	23	104	<b>516</b>	
05:15 PM	29	69	19	117		<b>14</b>	39	18	71		15	<b>122</b>	<b>54</b>	<b>191</b>		35	41	33	109	488	
05:30 PM	37	95	16	148		13	29	17	59		20	108	47	175		30	31	29	90	472	
05:45 PM	26	79	<b>23</b>	128		11	33	16	60		<b>22</b>	86	38	146		34	<b>51</b>	<b>40</b>	<b>125</b>	459	
Total Volume	131	354	68	553		50	153	75	278		68	429	179	676		144	159	125	428	1935	
% App. Total	23.7	64	12.3			18	55	27			10.1	63.5	26.5			33.6	37.1	29.2			
PHF	.840	.797	.739	.864		.893	.736	.781	.790		.773	.879	.829	.885		.800	.779	.781	.856		.938

**Peggy Malone & Associates**  
**(888) 247-8602**

File Name : N Main St and Patrick Henry Dr THU AM  
 Site Code :  
 Start Date : 9/20/2018  
 Page No : 1

Groups Printed- Car

Start Time	N. Main Southbound					Patrick Henry Westbound					N. Main Northbound					Patrick Henry Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
08:00 AM	21	87	7	0	115	9	15	13	2	39	5	24	11	1	41	15	18	15	1	49	244
08:15 AM	26	73	7	1	107	9	16	14	1	40	5	38	8	4	55	18	10	18	1	47	249
08:30 AM	27	115	15	2	159	6	27	12	3	48	5	25	3	5	38	16	15	15	2	48	293
08:45 AM	30	133	16	2	181	4	24	14	0	42	5	38	10	14	67	20	22	27	2	71	361
Total	104	408	45	5	562	28	82	53	6	169	20	125	32	24	201	69	65	75	6	215	1147
09:00 AM	24	121	11	2	158	6	21	16	3	46	3	49	16	6	74	35	9	17	2	63	341
09:15 AM	17	101	7	4	129	4	13	14	2	33	6	40	18	3	67	19	14	15	1	49	278
09:30 AM	17	69	5	1	92	2	13	7	1	23	9	36	13	5	63	6	14	17	1	38	216
09:45 AM	14	50	9	2	75	8	22	6	0	36	25	33	10	4	72	10	21	8	2	41	224
Total	72	341	32	9	454	20	69	43	6	138	43	158	57	18	276	70	58	57	6	191	1059
Grand Total	176	749	77	14	1016	48	151	96	12	307	63	283	89	42	477	139	123	132	12	406	2206
Apprch %	17.3	73.7	7.6	1.4		15.6	49.2	31.3	3.9		13.2	59.3	18.7	8.8		34.2	30.3	32.5	3		
Total %	8	34	3.5	0.6	46.1	2.2	6.8	4.4	0.5	13.9	2.9	12.8	4	1.9	21.6	6.3	5.6	6	0.5	18.4	

Start Time	N. Main Southbound					Patrick Henry Westbound					N. Main Northbound					Patrick Henry Eastbound				
	Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total	
Peak Hour Analysis From 08:00 AM to 09:45 AM - Peak 1 of 1																				
Peak Hour for Entire Intersection Begins at 08:30 AM																				
08:30 AM	27	115	15	157		6	27	12	45		5	25	3	33		16	15	15	46	281
08:45 AM	30	133	16	179		4	24	14	42		5	38	10	53		20	22	27	69	343
09:00 AM	24	121	11	156		6	21	16	43		3	49	16	68		35	9	17	61	328
09:15 AM	17	101	7	125		4	13	14	31		6	40	18	64		19	14	15	48	268
Total Volume	98	470	49	617		20	85	56	161		19	152	47	218		90	60	74	224	1220
% App. Total	15.9	76.2	7.9			12.4	52.8	34.8			8.7	69.7	21.6			40.2	26.8	33		
PHF	.817	.883	.766	.862		.833	.787	.875	.894		.792	.776	.653	.801		.643	.682	.685	.812	.889

**Peggy Malone & Associates**  
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File Name : N Main St and Patrick Henry Dr THU AM  
Site Code :  
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**Groups Printed- Truck**

Start Time	N. Main Southbound					Patrick Henry Westbound					N. Main Northbound					Patrick Henry Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
08:00 AM	3	1	1	0	5	1	2	0	0	3	0	1	1	0	2	0	0	1	0	1	11
08:15 AM	0	3	0	0	3	0	1	0	0	1	1	1	1	0	3	0	0	1	0	1	8
08:30 AM	3	2	0	0	5	1	3	0	0	4	0	2	0	0	2	0	0	0	0	0	11
08:45 AM	1	2	1	0	4	0	1	0	0	1	2	3	0	0	5	0	0	1	0	1	11
Total	7	8	2	0	17	2	7	0	0	9	3	7	2	0	12	0	0	3	0	3	41
09:00 AM	1	1	0	0	2	0	3	2	0	5	0	3	0	0	3	2	0	0	0	2	12
09:15 AM	3	2	1	0	6	0	0	1	0	1	1	2	0	0	3	0	0	2	0	2	12
09:30 AM	1	2	0	0	3	0	3	0	0	3	0	2	1	0	3	1	0	0	0	1	10
09:45 AM	1	1	0	0	2	0	2	1	0	3	0	2	1	0	3	0	0	1	0	1	9
Total	6	6	1	0	13	0	8	4	0	12	1	9	2	0	12	3	0	3	0	6	43
Grand Total	13	14	3	0	30	2	15	4	0	21	4	16	4	0	24	3	0	6	0	9	84
Apprch %	43.3	46.7	10	0	9.5	71.4	19	0	16.7	66.7	16.7	0	33.3	0	66.7	0	0	0	0	0	0
Total %	15.5	16.7	3.6	0	35.7	2.4	17.9	4.8	0	25	4.8	19	4.8	0	28.6	3.6	0	7.1	0	10.7	

Start Time	N. Main Southbound					Patrick Henry Westbound					N. Main Northbound					Patrick Henry Eastbound					Int. Total	
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total					
Peak Hour Analysis From 08:00 AM to 09:45 AM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 08:30 AM																						
08:30 AM	3	2	0	5	1	3	0	4	0	2	0	2	0	0	0	0	0	0	0	0	11	
08:45 AM	1	2	1	4	0	1	0	1	1	2	3	0	5	0	0	0	1	0	1	0	11	
09:00 AM	1	1	0	2	0	3	2	5	0	3	0	3	2	0	0	0	0	2	0	2	12	
09:15 AM	3	2	1	6	0	0	1	1	1	2	0	3	0	0	0	0	0	2	0	2	12	
Total Volume	8	7	2	17	1	7	3	11	3	10	0	13	2	0	3	5	2	0	3	5	46	
% App. Total	47.1	41.2	11.8	.708	9.1	63.6	27.3	.550	23.1	76.9	0	.650	40	0	60	.958	.500	.250	.000	.375	.625	
PHF	.667	.875	.500	.708	.250	.583	.375	.550	.375	.833	.000	.650	.250	.000	.375	.625	.958					

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Site Code :  
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**Groups Printed- Combined**

Start Time	N. Main Southbound					Patrick Henry Westbound					N. Main Northbound					Patrick Henry Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
08:00 AM	24	88	8	0	120	10	17	13	2	42	5	25	12	1	43	15	18	16	1	50	255
08:15 AM	26	76	7	1	110	9	17	14	1	41	6	39	9	4	58	18	10	19	1	48	257
08:30 AM	30	117	15	2	164	7	30	12	3	52	5	27	3	5	40	16	15	15	2	48	304
08:45 AM	31	135	17	2	185	4	25	14	0	43	7	41	10	14	72	20	22	28	2	72	372
Total	111	416	47	5	579	30	89	53	6	178	23	132	34	24	213	69	65	78	6	218	1188
09:00 AM	25	122	11	2	160	6	24	18	3	51	3	52	16	6	77	37	9	17	2	65	353
09:15 AM	20	103	8	4	135	4	13	15	2	34	7	42	18	3	70	19	14	17	1	51	290
09:30 AM	18	71	5	1	95	2	16	7	1	26	9	38	14	5	66	7	14	17	1	39	226
09:45 AM	15	51	9	2	77	8	24	7	0	39	25	35	11	4	75	10	21	9	2	42	233
Total	78	347	33	9	467	20	77	47	6	150	44	167	59	18	288	73	58	60	6	197	1102
Grand Total	189	763	80	14	1046	50	166	100	12	328	67	299	93	42	501	142	123	138	12	415	2290
Apprch %	18.1	72.9	7.6	1.3		15.2	50.6	30.5	3.7		13.4	59.7	18.6	8.4		34.2	29.6	33.3	2.9		
Total %	8.3	33.3	3.5	0.6	45.7	2.2	7.2	4.4	0.5	14.3	2.9	13.1	4.1	1.8	21.9	6.2	5.4	6	0.5	18.1	

Start Time	N. Main Southbound					Patrick Henry Westbound					N. Main Northbound					Patrick Henry Eastbound				
	Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 08:00 AM to 09:45 AM - Peak 1 of 1																				
Peak Hour for Entire Intersection Begins at 08:30 AM																				
08:30 AM	30	117	15	162		7	30	12	49		5	27	3	35		16	15	15	46	292
08:45 AM	31	135	17	183		4	25	14	43		7	41	10	58		20	22	28	70	354
09:00 AM	25	122	11	158		6	24	18	48		3	52	16	71		37	9	17	63	340
09:15 AM	20	103	8	131		4	13	15	32		7	42	18	67		19	14	17	50	280
Total Volume	106	477	51	634		21	92	59	172		22	162	47	231		92	60	77	229	1266
% App. Total	16.7	75.2	8			12.2	53.5	34.3			9.5	70.1	20.3			40.2	26.2	33.6		
PHF	.855	.883	.750	.866		.750	.767	.819	.878		.786	.779	.653	.813		.622	.682	.688	.818	.894

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File Name : N Main St and Patrick Henry Dr THU PM  
Site Code :  
Start Date : 9/20/2018  
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Groups Printed- Car

Start Time	N. Main Southbound					Patrick Henry Westbound					N. Main Northbound					Patrick Henry Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:30 PM	44	79	16	1	140	7	34	14	0	55	13	86	37	3	139	12	20	12	2	46	380
04:45 PM	38	86	21	4	149	6	33	21	1	61	18	100	29	3	150	64	33	27	1	125	485
Total	82	165	37	5	289	13	67	35	1	116	31	186	66	6	289	76	53	39	3	171	865
05:00 PM	51	106	18	2	177	10	42	9	2	63	19	124	37	2	182	33	30	32	1	96	518
05:15 PM	29	80	19	4	132	7	55	16	3	81	27	101	41	3	172	29	53	29	1	112	497
05:30 PM	34	81	13	2	130	15	34	15	1	65	14	91	39	6	150	40	40	39	0	119	464
05:45 PM	32	96	24	1	153	11	35	11	1	58	23	72	22	1	118	47	42	26	0	115	444
Total	146	363	74	9	592	43	166	51	7	267	83	388	139	12	622	149	165	126	2	442	1923
06:00 PM	25	84	9	1	119	7	28	13	1	49	13	89	33	4	139	55	35	18	0	108	415
06:15 PM	18	71	12	3	104	10	31	9	1	51	15	83	38	1	137	41	32	22	3	98	390
Grand Total	271	683	132	18	1104	73	292	108	10	483	142	746	276	23	1187	321	285	205	8	819	3593
Apprch %	24.5	61.9	12	1.6		15.1	60.5	22.4	2.1		12	62.8	23.3	1.9		39.2	34.8	25	1		
Total %	7.5	19	3.7	0.5	30.7	2	8.1	3	0.3	13.4	4	20.8	7.7	0.6	33	8.9	7.9	5.7	0.2	22.8	

Start Time	N. Main Southbound					Patrick Henry Westbound					N. Main Northbound					Patrick Henry Eastbound				
	Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																				
Peak Hour for Entire Intersection Begins at 04:45 PM																				
04:45 PM	38	86	21	145		6	33	21	60		18	100	29	147		64	33	27	124	476
05:00 PM	51	106	18	175		10	42	9	61		19	124	37	180		33	30	32	95	511
05:15 PM	29	80	19	128		7	55	16	78		27	101	41	169		29	53	29	111	486
05:30 PM	34	81	13	128		15	34	15	64		14	91	39	144		40	40	39	119	455
Total Volume	152	353	71	576		38	164	61	263		78	416	146	640		166	156	127	449	1928
% App. Total	26.4	61.3	12.3			14.4	62.4	23.2			12.2	65	22.8			37	34.7	28.3		
PHF	.745	.833	.845	.823		.633	.745	.726	.843		.722	.839	.890	.889		.648	.736	.814	.905	.943

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Site Code :  
Start Date : 9/20/2018  
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**Groups Printed- Truck**

Start Time	N. Main Southbound					Patrick Henry Westbound					N. Main Northbound					Patrick Henry Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:30 PM	3	2	0	0	5	1	1	1	0	3	1	3	0	0	4	0	0	0	0	0	12
04:45 PM	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	3
Total	3	2	0	0	5	1	2	1	0	4	1	4	0	0	5	0	0	1	0	1	15
05:00 PM	1	2	0	0	3	0	2	1	0	3	0	1	1	0	2	0	0	1	0	1	9
05:15 PM	0	3	0	0	3	0	1	0	0	1	0	2	0	0	2	0	0	1	0	1	7
05:30 PM	2	1	0	0	3	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0	7
05:45 PM	0	2	0	0	2	0	2	0	0	2	0	1	0	0	1	0	0	1	0	1	6
Total	3	8	0	0	11	0	7	1	0	8	0	6	1	0	7	0	0	3	0	3	29
06:00 PM	2	0	0	0	2	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	4
06:15 PM	0	2	0	0	2	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	5
Grand Total	8	12	0	0	20	1	11	2	0	14	1	12	1	0	14	0	0	5	0	5	53
Apprch %	40	60	0	0		7.1	78.6	14.3	0		7.1	85.7	7.1	0		0	0	100	0		
Total %	15.1	22.6	0	0	37.7	1.9	20.8	3.8	0	26.4	1.9	22.6	1.9	0	26.4	0	0	9.4	0	9.4	

Start Time	N. Main Southbound					Patrick Henry Westbound					N. Main Northbound					Patrick Henry Eastbound						
	Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Int. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 04:30 PM																						
04:30 PM	3	2	0	5		1	1	1	3		1	3	0	4		0	0	0	0		12	
04:45 PM	0	0	0	0		0	1	0	1		0	1	0	1		0	0	1	1		3	
05:00 PM	1	2	0	3		0	2	1	3		0	1	1	2		0	0	1	1		9	
05:15 PM	0	3	0	3		0	1	0	1		0	2	0	2		0	0	1	1		7	
Total Volume	4	7	0	11		1	5	2	8		1	7	1	9		0	0	3	3		31	
% App. Total	36.4	63.6	0			12.5	62.5	25			11.1	77.8	11.1			0	0	100	0			
PHF	.333	.583	.000	.550		.250	.625	.500	.667		.250	.583	.250	.563		.000	.000	.750	.750		.646	

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Site Code :  
Start Date : 9/20/2018  
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Groups Printed- Combined

Start Time	N. Main Southbound					Patrick Henry Westbound					N. Main Northbound					Patrick Henry Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:30 PM	47	81	16	1	145	8	35	15	0	58	14	89	37	3	143	12	20	12	2	46	392
04:45 PM	38	86	21	4	149	6	34	21	1	62	18	101	29	3	151	64	33	28	1	126	488
Total	85	167	37	5	294	14	69	36	1	120	32	190	66	6	294	76	53	40	3	172	880
05:00 PM	52	108	18	2	180	10	44	10	2	66	19	125	38	2	184	33	30	33	1	97	527
05:15 PM	29	83	19	4	135	7	56	16	3	82	27	103	41	3	174	29	53	30	1	113	504
05:30 PM	36	82	13	2	133	15	36	15	1	67	14	93	39	6	152	40	40	39	0	119	471
05:45 PM	32	98	24	1	155	11	37	11	1	60	23	73	22	1	119	47	42	27	0	116	450
Total	149	371	74	9	603	43	173	52	7	275	83	394	140	12	629	149	165	129	2	445	1952
06:00 PM	27	84	9	1	121	7	29	13	1	50	13	90	33	4	140	55	35	18	0	108	419
06:15 PM	18	73	12	3	106	10	32	9	1	52	15	84	38	1	138	41	32	23	3	99	395
Grand Total	279	695	132	18	1124	74	303	110	10	497	143	758	277	23	1201	321	285	210	8	824	3646
Apprch %	24.8	61.8	11.7	1.6		14.9	61	22.1	2		11.9	63.1	23.1	1.9		39	34.6	25.5	1		
Total %	7.7	19.1	3.6	0.5	30.8	2	8.3	3	0.3	13.6	3.9	20.8	7.6	0.6	32.9	8.8	7.8	5.8	0.2	22.6	

Start Time	N. Main Southbound					Patrick Henry Westbound					N. Main Northbound					Patrick Henry Eastbound				
	Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																				
Peak Hour for Entire Intersection Begins at 04:45 PM																				
04:45 PM	38	86	21	145		6	34	21	61		18	101	29	148		64	33	28	125	479
05:00 PM	52	108	18	178		10	44	10	64		19	125	38	182		33	30	33	96	520
05:15 PM	29	83	19	131		7	56	16	79		27	103	41	171		29	53	30	112	493
05:30 PM	36	82	13	131		15	36	15	66		14	93	39	146		40	40	39	119	462
Total Volume	155	359	71	585		38	170	62	270		78	422	147	647		166	156	130	452	1954
% App. Total	26.5	61.4	12.1			14.1	63	23			12.1	65.2	22.7			36.7	34.5	28.8		
PHF	.745	.831	.845	.822		.633	.759	.738	.854		.722	.844	.896	.889		.648	.736	.833	.904	.939

## **Appendix D**

### **Signal Timing Data**

# Programmed EPAC Data

4/20/2018  
2:48:12PM

Intersection Name: Patrick Henry-Progress

Access Code: 9999 Channel: 1 Address: 0 Revision: 3.33e  
IP:

Intersection Alias:

pathenryprog Patrick Access Data  
Henry-Progress

:1200 Baud  
:9600 Baud

## Phase Data

### Vehical Basic Timings

Phase	Min_Grn	Passage	Max1	Max2	Yellow	All Red
1	15	3.0	30	30	3.4	2.1
2	15	3.0	30	50	3.1	2.2
3	5	3.0	20	30	3.1	3.3
4	8	3.0	20	50	3.0	2.4
7	5	3.0	20	30	3.0	2.4
8	8	3.0	20	50	3.1	3.3

### Vehical Density Timings

Added	Initial	Max	Initial	Time B4 Reduction	Cars Before	Time To Reduce	Min Gap
0.0	0	0	0	0	0	0	0.0
0.0	0	0	0	0	0	0	0.0
0.0	0	0	0	0	0	0	0.0
0.0	0	0	0	0	0	0	0.0
0.0	0	0	0	0	0	0	0.0
0.0	0	0	0	0	0	0	0.0

### Pedestrian Timing

### Extended Actuated

### General Control

### Miscellaneous

No

Phase	Ped Walk	Clear	Flashing Walk	Ped Clear	Rest in Walk	Non-Act Initialize	Veh Response	Ped Recall	Recall Delay	Non Lock	Dual Entry	Last Car Passage	Conditional Service	Simultaneous Gap Out
1	5	11	No	0	No	Inactive	None	None	0	Yes	Yes	No	No	No
2	5	10	No	0	No	Green	NonActI	Min	0	Yes	No	No	No	No
3	0	0	No	0	No	Inactive	None	None	0	Yes	No	No	No	No
4	5	13	No	0	No	Inactive	NonActII	None	0	Yes	Yes	No	No	No
7	0	0	No	0	No	Inactive	None	None	0	Yes	No	No	No	No
8	5	13	No	0	No	Inactive	NonActII	None	0	Yes	Yes	No	No	No

### Special Sequence

### Default Data

### Vehical Detector Phase Assignment

Assigned Phase

Mode

Switched Phase

Extend

Delay

### Default Data

### Pedestrian Detector

### Default Data

### Special Detector Phase Assignment

Assign Phase Mode

Switched Phase Extend

Delay

### Default Data

## Unit Data

### General Control

Startup Time: 5sec Startup State: Flash Red Revert: 4.0sec

Auto Ped Clear: No Stop Time Reset: No Alternate Sequence: 0

Aux Switch Func: 0:NoFunction

Input Ring	Output Response	Selection
1	Ring 1	Ring 1
2	Ring 2	Ring 2
3	None	None
4	None	None

### Remote Flash

Test A = Flash

Channel Flash Color Alternat

Flash Entry Exit

Phase Phase Phase

### Default Data - No Flash

ABC connector Input Modes: 0

ABC connector Output Modes: 0

D connector Input Modes: 3

D connector Output Modes: 0

### Overlaps

Phase(s)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yellow	4.0	2.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Red	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Stop Grn/Yel Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Strat Green Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring			Phase(s)															
Phase	Ring	Next Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Concurrent Phases			1	2	3	4	1	1	3	3	9	10	11	12	13	14	15	16
1	1	2	5	5	7	7	2	2	4	4								
2	1	3	6	6	8	8	5	6	7	8								
3	1	4																
4	1	1																
7	2	8																
8	2	5																

### Alternate Sequences

No Alternate Sequences Programmed

Port 1 Data  
BIU Port Message  
Addr Status 40

### Default Data

Control	Channel	Hardware Pins	Control	Channel	Hardware Pins
1 - Veh Phase 1	1	1 - Phase 1 RYG	2 - Veh Phase 2	2	2 - Phase 2 RYG
3 - Veh Phase 3	3	3 - Phase 3 RYG	4 - Veh Phase 4	4	4 - Phase 4 RYG
5 - Veh Phase 5	5	5 - Phase 5 RYG	6 - Veh Phase 6	6	6 - Phase 6 RYG
7 - Veh Phase 7	7	7 - Phase 7 RYG	8 - Veh Phase 8	8	8 - Phase 8 RYG
18 - Ped Phase 2	9	10 - Phase 2 DPW	20 - Ped Phase 4	10	12 - Phase 4 DPW
22 - Ped Phase 6	11	14 - Phase 6 DPW	24 - Ped Phase 8	12	16 - Phase 8 DPW
33 - Overlap A	13	17 - Overlap A RYG	34 - Overlap B	14	18 - Overlap B RYG
35 - Overlap C	15	19 - Overlap C RYG	36 - Overlap D	16	20 - Overlap D RYG
17 - Ped Phase 1	17	9 - Phase 1 DPW	19 - Ped Phase 3	18	11 - Phase 3 DPW
21 - Ped Phase 5	19	13 - Phase 5 DPW	23 - Ped Phase 7	20	15 - Phase 7 DPW

### Coordination Data

General Coordination Data

Dial/Split Cycle

/

Operation Mode: 0=Free

Offset Mode: 0=Beg Grn

Manual Dial: 1

Coordination Mode: 0=Permissive

Force Mode: 0=Plan

Manual Split: 1

Maximun Mode: 2=Max 2

Max Dwell Time: 0

Manual Offset: 1

Correction Mode: 0=Dwell

Yield Period: 0

### Split Times and Phase Mode

Dial / Split

Ph. Splits Ph. Mode

Ph. Splits Ph. Mode

Ph. Splits Ph. Mode

Ph. Splits Ph. Mode

### Traffic Plan Data

Plan: //

Offset Time: Alt. Sequence: Mode:

Rg 2 Lag Time:

Rg 3 Lag Time: Rg 4 Lag Time:

### Local TBC Data

Start of Daylight Saving Month: 3 Week: 2 Cycle Zero Reference Hours: 0 Min: 0

Source Day	Equate Days						
	1	2	3	4	5	6	7

End of Daylight Saving Month: 11 Week: 1

### Traffic Data

Event	Day	Time	D/S/O	flash	PHASE FUNCTION														
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
:	//				<input type="checkbox"/>														

### AUX. Events

Event	Program Day	Hour	Min.	Aux Outputs 1 2 3	Det. Diag. D1	Det. Rpt. D2	Det. Mult100 D3	Special Function Outputs								
								Dimming	1	2	3	4	5	6	7	8
				<input type="checkbox"/>												

Default Data - No Special Day(s) or Week(s) Programmed

## Special Functions

Function	SF1	SF2	SF3	SF4	SF5	SF6	SF7	SF8
Special Function 1	X							
Special Function 2		X						
Special Function 3			X					
Special Function 4				X				
Special Function 5					X			
Special Function 6						X		
Special Function 7							X	
Special Function 8								X

## Phase Function

Phase Function Map	PF1	PF2	PF3	PF4	PF5	PF6	PF7	PF8	PF9	PF10	PF11	PF12	PF13	PF14	PF15	PF16
Phase 1 Max2	X															
Phase 2 Max2		X														
Phase 3 Max2			X													
Phase 4 Max2				X												
Phase 5 Max2					X											
Phase 6 Max2						X										
Phase 7 Max2							X									
Phase 8 Max2								X								
Phase 1 Phase Omit									X							
Phase 2 Phase Omit										X						
Phase 3 Phase Omit											X					
Phase 4 Phase Omit												X				
Phase 5 Phase Omit													X			
Phase 6 Phase Omit														X		
Phase 7 Phase Omit															X	
Phase 8 Phase Omit																X

## Dimming Data

Channel Red Yellow Green Alternate



Default Data - No Dimming Programmed

## Preemption Data

### General Preemption Data

Flash > Preempt 1, Preempt 1 > Preempt 2, Preempt 2 > Preempt 3, Preempt 3 > Preempt 4, Preempt 4 > Preempt 5, Preempt 5 > Preempt 6  
 Ring 1 Min GRN/WLK = 5      Ring 2 Min GRN/WLK = 5      Ring 3 Min GRN/WLK = 5      Ring 4 Min GRN/WLK = 5

Preempt	Preempt Timers										Select			Track			D	Return			
	Non-Locking		Link to	Prmnt	Delay	Extend	Duration	MaxCall	Lck-Out	GateExt	Debounce	Ped Clr	Yel Red	Grn Ped	Yel Red	well Grn	Ped Clr	Yel Red			
1	No	0	0	0	0	0	0	0	0	0.0	8	40	20	0	8	40	20	10	8	40	20
2	No	0	0	0	0	0	0	0	0	0.0	8	40	20	0	8	40	20	10	8	40	20
3	No	0	0	0	0	0	0	0	0	0.0	8	40	20	0	8	40	20	10	8	40	20
4	No	0	0	0	0	0	0	0	0	0.0	8	40	20	0	8	40	20	10	8	40	20
5	No	0	0	0	0	0	0	0	0	0.0	8	40	20	0	8	40	20	10	8	40	20
6	No	0	0	0	0	0	0	0	0	0.0	8	40	20	0	8	40	20	10	8	40	20
1	No	0	0	0	0	0	0	0	0	0.0	8	40	20	10	8	40	20	10	8	40	20
2	No	0	0	0	0	0	0	0	0	0.0	8	40	20	10	8	40	20	10	8	40	20
3	No	0	0	0	0	0	0	0	0	0.0	8	40	20	10	8	40	20	10	8	40	20
4	No	0	0	0	0	0	0	0	0	0.0	8	40	20	10	8	40	20	10	8	40	20
5	No	0	0	0	0	0	0	0	0	0.0	8	40	20	10	8	40	20	10	8	40	20
6	No	0	0	0	0	0	0	0	0	0.0	8	40	20	10	8	40	20	10	8	40	20

Preempt 1			Preempt 2			Preempt 3			Preempt 4			Preempt 5			Preempt 6		
Phase	Exit Phase	Exit Calls															
1	No	Yes															
2	No	Yes	2	Yes	Yes	2	No	Yes									
3	No	Yes	3	No	Yes	3	Yes	Yes	3	No	Yes	3	No	Yes	3	No	Yes
4	No	Yes	4	No	Yes	4	No	Yes	4	Yes	Yes	4	No	Yes	4	No	Yes
5	No	Yes															
6	No	Yes															
7	No	Yes	7	No	Yes	7	No	Yes	7	Yes	Yes	7	No	Yes	7	No	Yes
8	No	Yes	8	No	Yes	8	Yes	Yes	8	No	Yes	8	No	Yes	8	No	Yes

Priority Timers										Skip Phases							
Priority	Non-Locking	Delay	Extend	Duration	Dwell	Max_Call	Lock-Out										
1	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0=Do not Skip Phases
2	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0=Do not Skip Phases
3	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0=Do not Skip Phases
4	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0=Do not Skip Phases
5	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0=Do not Skip Phases
6	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0=Do not Skip Phases

Priority 1			Priority 2			Priority 3			Priority 4			Priority 5			Priority 6		
Phase	Exit Phase	Exit Calls															
Priority 1	1	Red	Priority 2	2	Red	Priority 3	3	Red	Priority 4	4	Red	Priority 5	5	Red	Priority 6	6	Red
Phase	Exit Phase	Exit Calls															

Vehical Phases						Pedestrian Phases						Overlaps					
Ph.	Track	Dwell	Cycle	Ph	Track	Dwell	Cycle	Ovlp	Track	Dwell	Cycle	I	II	III	IV	V	VI
1	Red	Red	No	1	Don't Walk	Don't Walk	No	A	Red	Red	No	0	0	0	0	0	0
2	Red	Red	No	2	Don't Walk	Don't Walk	No	B	Red	Red	No	0	0	0	0	0	0
3	Red	Red	No	3	Don't Walk	Don't Walk	No	C	Red	Red	No	0	0	0	0	0	0
4	Red	Red	No	4	Don't Walk	Don't Walk	No	D	Red	Red	No	0	0	0	0	0	0
5	Red	Red	No	5	Don't Walk	Don't Walk	No	E	Red	Red	No	0	0	0	0	0	0
6	Red	Red	No	6	Don't Walk	Don't Walk	No	F	Red	Red	No	0	0	0	0	0	0
7	Red	Red	No	7	Don't Walk	Don't Walk	No	G	Red	Red	No	0	0	0	0	0	0
8	Red	Red	No	8	Don't Walk	Don't Walk	No	H	Red	Red	No	0	0	0	0	0	0
9	Red	Red	No	9	Don't Walk	Don't Walk	No	I	Red	Red	No	0	0	0	0	0	0
10	Red	Red	No	10	Don't Walk	Don't Walk	No	J	Red	Red	No	0	0	0	0	0	0
11	Red	Red	No	11	Don't Walk	Don't Walk	No	K	Red	Red	No	0	0	0	0	0	0
12	Red	Red	No	12	Don't Walk	Don't Walk	No	L	Red	Red	No	0	0	0	0	0	0
13	Red	Red	No	13	Don't Walk	Don't Walk	No	M	Red	Red	No	0	0	0	0	0	0
14	Red	Red	No	14	Don't Walk	Don't Walk	No	N	Red	Red	No	0	0	0	0	0	0
15	Red	Red	No	15	Don't Walk	Don't Walk	No	O	Red	Red	No	0	0	0	0	0	0
16	Red	Red	No	16	Don't Walk	Don't Walk	No	P	Red	Red	No	0	0	0	0	0	0



Vehical Phases			Pedestrian Phases			Overlaps					
Ph.	Track	Dwell	Cycle	Ph.	Track	Dwell	Cycle	Ovlp.	Track	Dwell	Cycle
1	Red	Green	No	1	Don't Walk	Don't Walk	No	A	Red	Red	No
2	Red	Red	No	2	Don't Walk	Don't Walk	No	B	Red	Red	No
3	Red	Red	No	3	Don't Walk	Don't Walk	No	C	Red	Red	No
4	Red	Red	No	4	Don't Walk	Don't Walk	No	D	Red	Red	No
5	Red	Red	No	5	Don't Walk	Don't Walk	No	E	Red	Red	No
6	Red	Red	No	6	Don't Walk	Don't Walk	No	F	Red	Red	No
7	Red	Red	No	7	Don't Walk	Don't Walk	No	G	Red	Red	No
8	Red	Red	No	8	Don't Walk	Don't Walk	No	H	Red	Red	No
9	Red	Red	No	9	Don't Walk	Don't Walk	No	I	Red	Red	No
10	Red	Red	No	10	Don't Walk	Don't Walk	No	J	Red	Red	No
11	Red	Red	No	11	Don't Walk	Don't Walk	No	K	Red	Red	No
12	Red	Red	No	12	Don't Walk	Don't Walk	No	L	Red	Red	No
13	Red	Red	No	13	Don't Walk	Don't Walk	No	M	Red	Red	No
14	Red	Red	No	14	Don't Walk	Don't Walk	No	N	Red	Red	No
15	Red	Red	No	15	Don't Walk	Don't Walk	No	O	Red	Red	No
16	Red	Red	No	16	Don't Walk	Don't Walk	No	P	Red	Red	No

Preempt 6

Vehical Phases			Pedestrian Phases			Overlaps					
Ph.	Track	Dwell	Cycle	Ph.	Track	Dwell	Cycle	Ovlp.	Track	Dwell	Cycle
1	Red	Red	No	1	Don't Walk	Don't Walk	No	A	Red	Red	No
2	Red	Red	No	2	Don't Walk	Don't Walk	No	B	Red	Red	No
3	Red	Red	No	3	Don't Walk	Don't Walk	No	C	Red	Red	No
4	Red	Red	No	4	Don't Walk	Don't Walk	No	D	Red	Red	No
5	Red	Red	No	5	Don't Walk	Don't Walk	No	E	Red	Red	No
6	Red	Red	No	6	Don't Walk	Don't Walk	No	F	Red	Red	No
7	Red	Red	No	7	Don't Walk	Don't Walk	No	G	Red	Red	No
8	Red	Red	No	8	Don't Walk	Don't Walk	No	H	Red	Red	No
9	Red	Red	No	9	Don't Walk	Don't Walk	No	I	Red	Red	No
10	Red	Red	No	10	Don't Walk	Don't Walk	No	J	Red	Red	No
11	Red	Red	No	11	Don't Walk	Don't Walk	No	K	Red	Red	No
12	Red	Red	No	12	Don't Walk	Don't Walk	No	L	Red	Red	No
13	Red	Red	No	13	Don't Walk	Don't Walk	No	M	Red	Red	No
14	Red	Red	No	14	Don't Walk	Don't Walk	No	N	Red	Red	No
15	Red	Red	No	15	Don't Walk	Don't Walk	No	O	Red	Red	No
16	Red	Red	No	16	Don't Walk	Don't Walk	No	P	Red	Red	No

## System/Detectors Data

### Local Critical Alarms

Revert to Backup: 15

Cycle Failure: No

Local Fash: No

Special Status 1: No

1st Phone:

Coord Failure: No

Special Status 2: No

2nd Phone:

Conflict Flash: No

Special Status 3: No

Remote Flash: No

Special Status 4: No

Voltage Monitor: No

Special Status 5: No

Special Status 6: No

### Traffic Responsive

System Detector	Average Veh/Hr	Occupancy Time(mins)	Min Correction/10	Queue 1 Volume %	System Detectors	Weight Factor	Queue 2 System Detectors	Weight Factor
Detector Channel								

### Default Data

Sample Interval:

### Default Data

Queue: 1 Input Selection: 0=Average

### Default Data

Detector Failed Level : 0

Queue:

Level Enter Leave Dial / Split / Offset

Queue: 2 Input Selection: 0=Average

Detector Failed Level : 0

### Default Data

#### Vehical Detector

Diagnostic Value 0

#### Vehical Detector

Diagnostic Value 1

#### Special Detector

Diagnostic Value 0

Max Presence

No Activity

Erratic Count

Max Presence

No Activity

Erratic Count

Max Presence

No Activity

Count

Default Data - Diag 0 Values

Default Data - No Diag 1 Values

Default Data - No Diag 0 Valt

Pedestrian Detector

Diagnostic Value 0

Max No Erratic  
Detector Presence Activity Count

### Default Data - No Diag 0 Values

Speed Trap Data

Speed Trap:

Measurement:

Detector 1 Detector\_2 Distance :

Pedestrian Detector

Diagnostic Value 1

Max No Erratic  
Detector Presence Activity Count

### Default Data - No Diag 1 Values

Dial/Split/Offset

//

### Default Data

Special Detector

Diagnostic Value 1

Max No Erratic  
Detector Presence Activity Count

### Default Data - No Diag 1 Values

Speed Trap

Speed Trap

## Default Data

Volume Detector Data

Report Interval

Volume Controller

Detector Detector

Number Channel

## Default Data

## North Main & Patrick Henry

Check/reset time clock

Check/verify standard Ring Structure

Input Traffic Events

Input Equate Data

Vehicle Recalls - Min for Phases 2 & 6

Lock/Non-Lock - Check settings

Check Dual Entry settings - 2, 6

Switch Phase: None

Detector Delay - 10 sec Phases 1,3,4,5

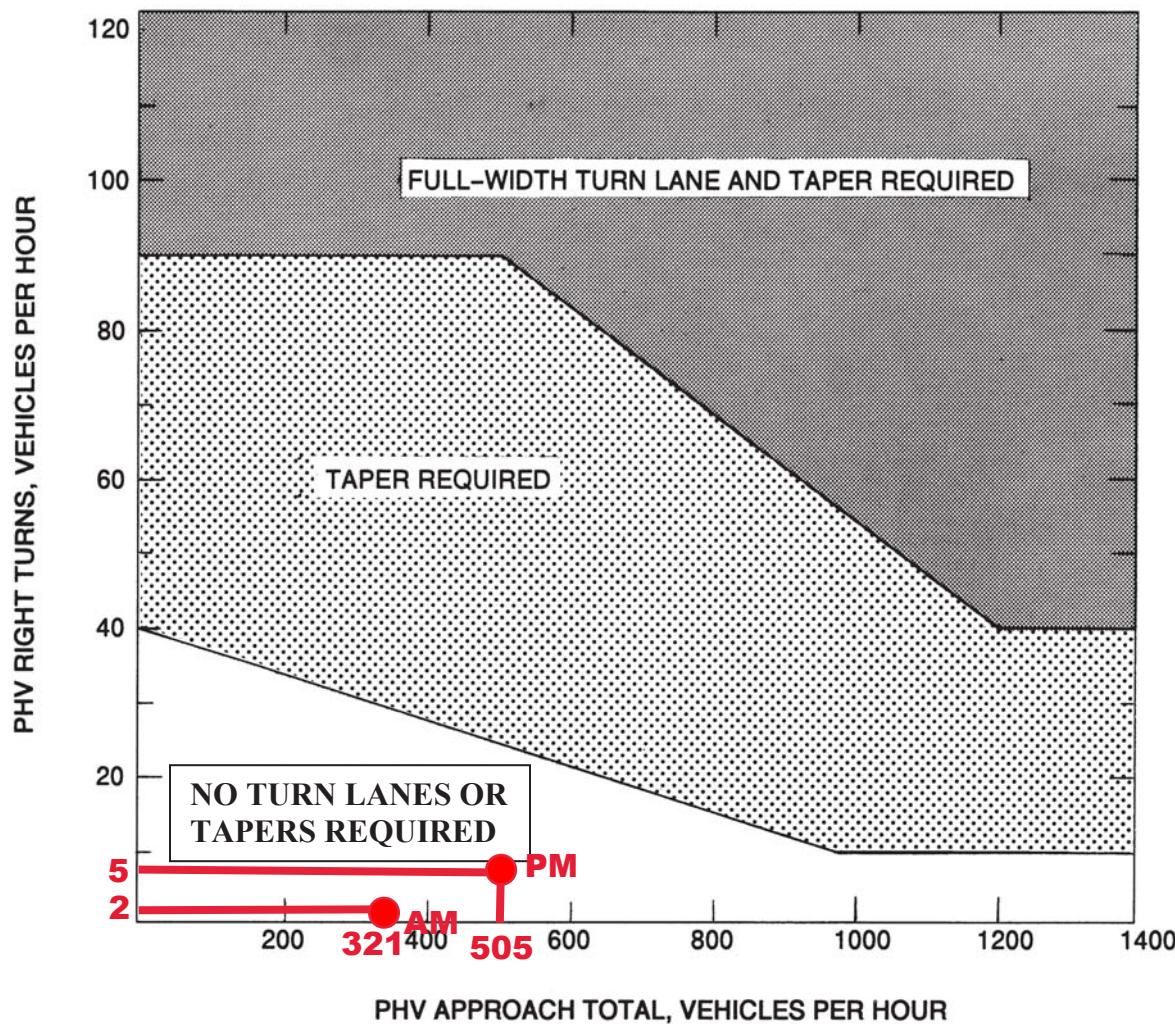
Coordination Settings							
OPER	MODE	MAX	CORR	OFST	FRCE	MX DWLL	YIELD
<b>0 - FREE</b>	0	0	0	0	0	0	0

Phase	Clearance Intervals							
	1 - NBL	2 - SBT	3 - EB	4 - WB	5 - SBL	6 - NBT	7 -	8 -
Min Green	5	15	8	8	5	15	X	X
Max1	25	45	35	35	25	45	X	X
Passage	3.0	3.0	3.0	3.0	3.0	3.0	X	X
Yellow	3.5	4.5	3.0	3.0	3.5	4.5	X	X
Red	2.5	2.0	3.0	3.0	2.5	2.0	X	X

Phase	Pedestrian Clearance Intervals							
	1 - NBL	2 - SBT	3 - EB	4 - WB	5 - SBL	6 - NBT	7 -	8 -
Walk	X	7	7	7	X	7	X	X
Flash D/W	X	20	22	21	X	20	X	X

## **Appendix E**

### **VDOT Turn Lane Worksheets**



Appropriate Radius required at all Intersections and Entrances (Commercial or Private).

#### LEGEND

**PHV** - Peak Hour Volume (also Design Hourly Volume equivalent)

#### Adjustment for Right Turns

If PHV is not known use formula:  $\text{PHV} = \text{ADT} \times K \times D$

K = the percent of AADT occurring in the peak hour

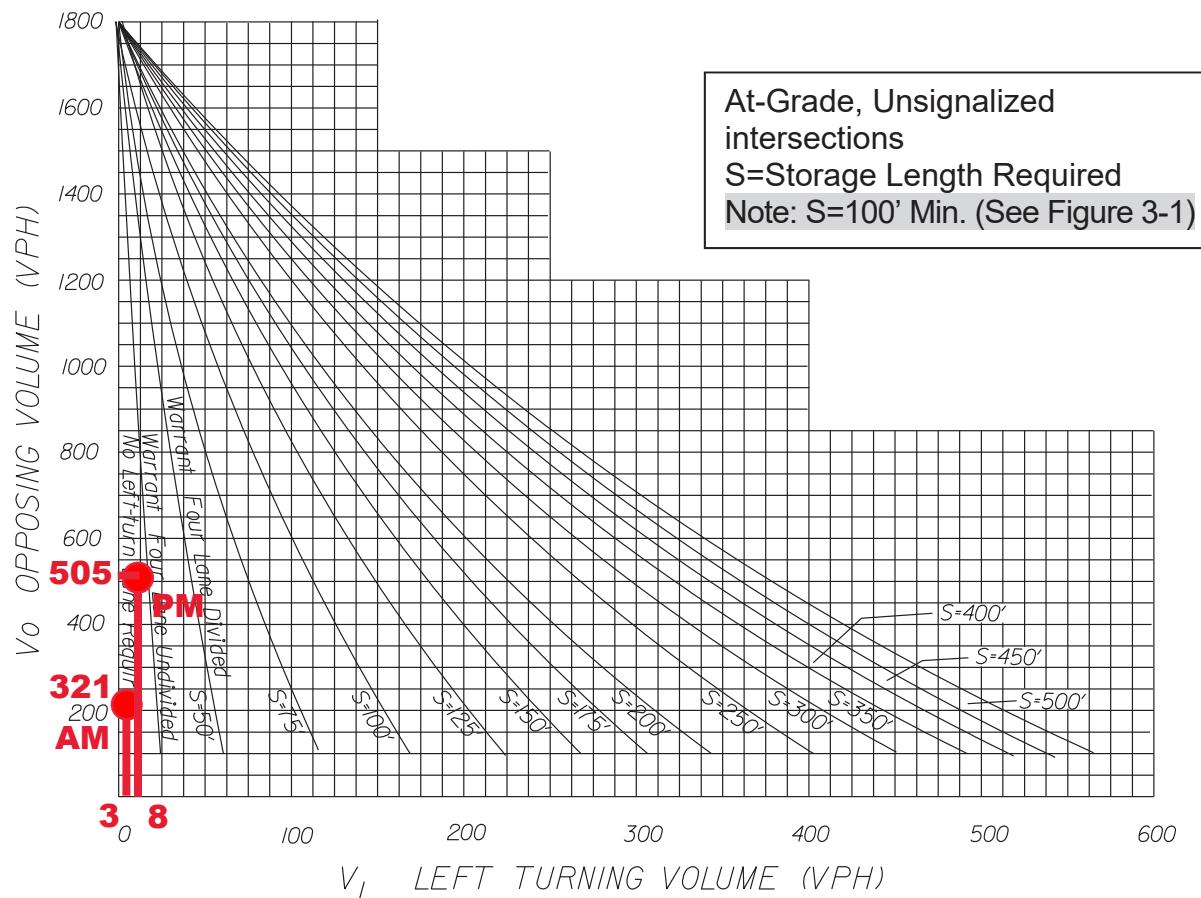
D = the percent of traffic in the peak direction of flow

Note: An average of 11% for K x D will suffice.

When right turn facilities are warranted, see Figure 3-1 for design criteria.\*

**FIGURE 3-27 WARRANTS FOR RIGHT TURN TREATMENT (4-LANE HIGHWAY)**

### Warrants for Left Turn Storage Lanes on Four-Lane Highways



**FIGURE 3-3 WARRANTS FOR LEFT TURN STORAGE LANES ON FOUR-LANE HIGHWAYS\***

Figure 3-3 was derived from Highway Research Report No. 211.

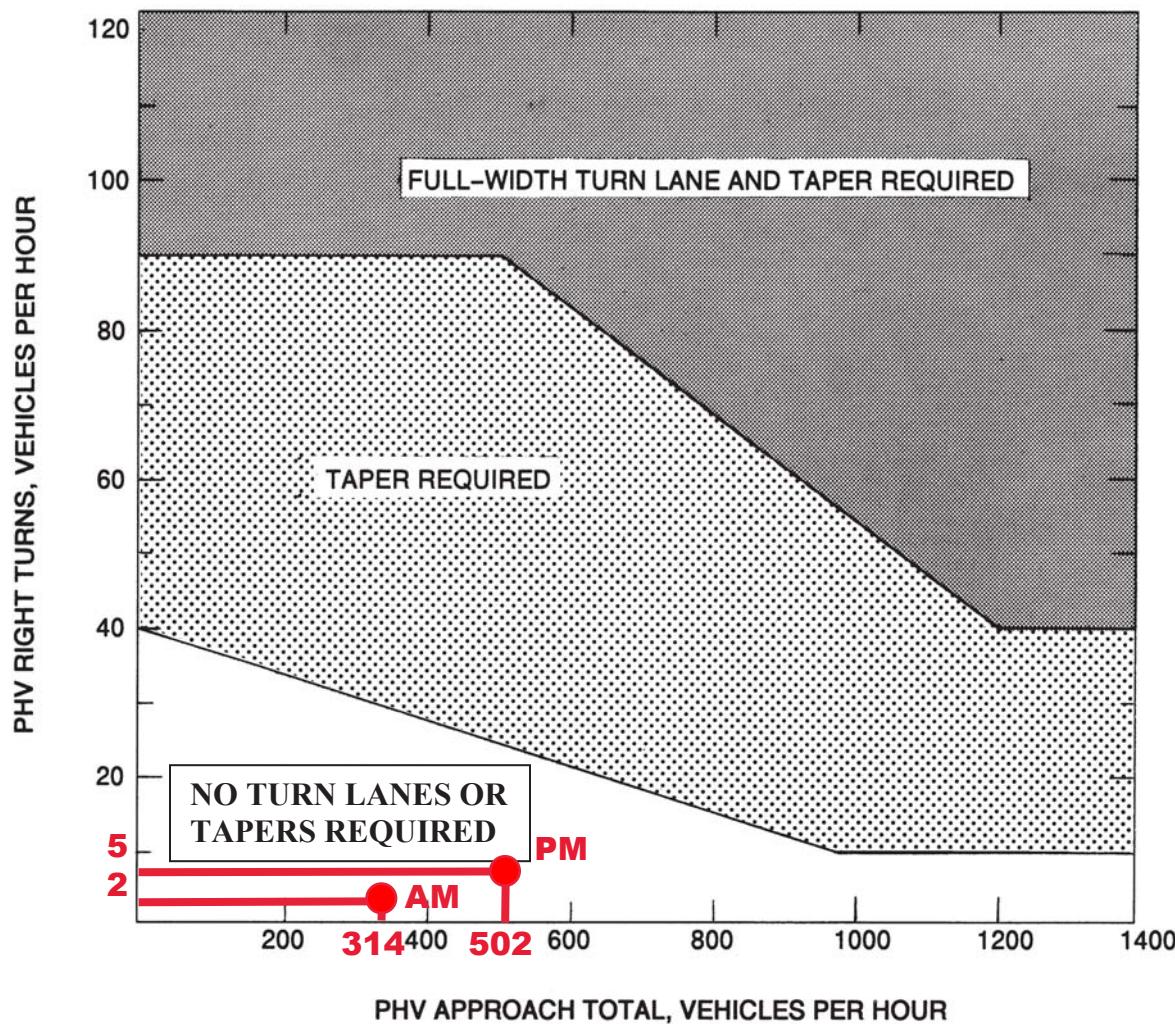
Opposing volume and left turning volume in vehicles per hour (VPH) are used for left turn storage lane warrants on four-lane highways.

For plan detail requirements when curb and/or gutter are used, see VDOT's Road Design Manual, Section 2E-3 on the VDOT web site:

<http://www.virginiadot.org/business/locdes/rdmanual-index.asp>.

Left-turn lanes shall also be established on two-lane highways where traffic volumes are high enough to warrant them.

\* Rev. 1/18



Appropriate Radius required at all Intersections and Entrances (Commercial or Private).

#### LEGEND

**PHV** - Peak Hour Volume (also Design Hourly Volume equivalent)

#### Adjustment for Right Turns

If PHV is not known use formula:  $\text{PHV} = \text{ADT} \times K \times D$

K = the percent of AADT occurring in the peak hour

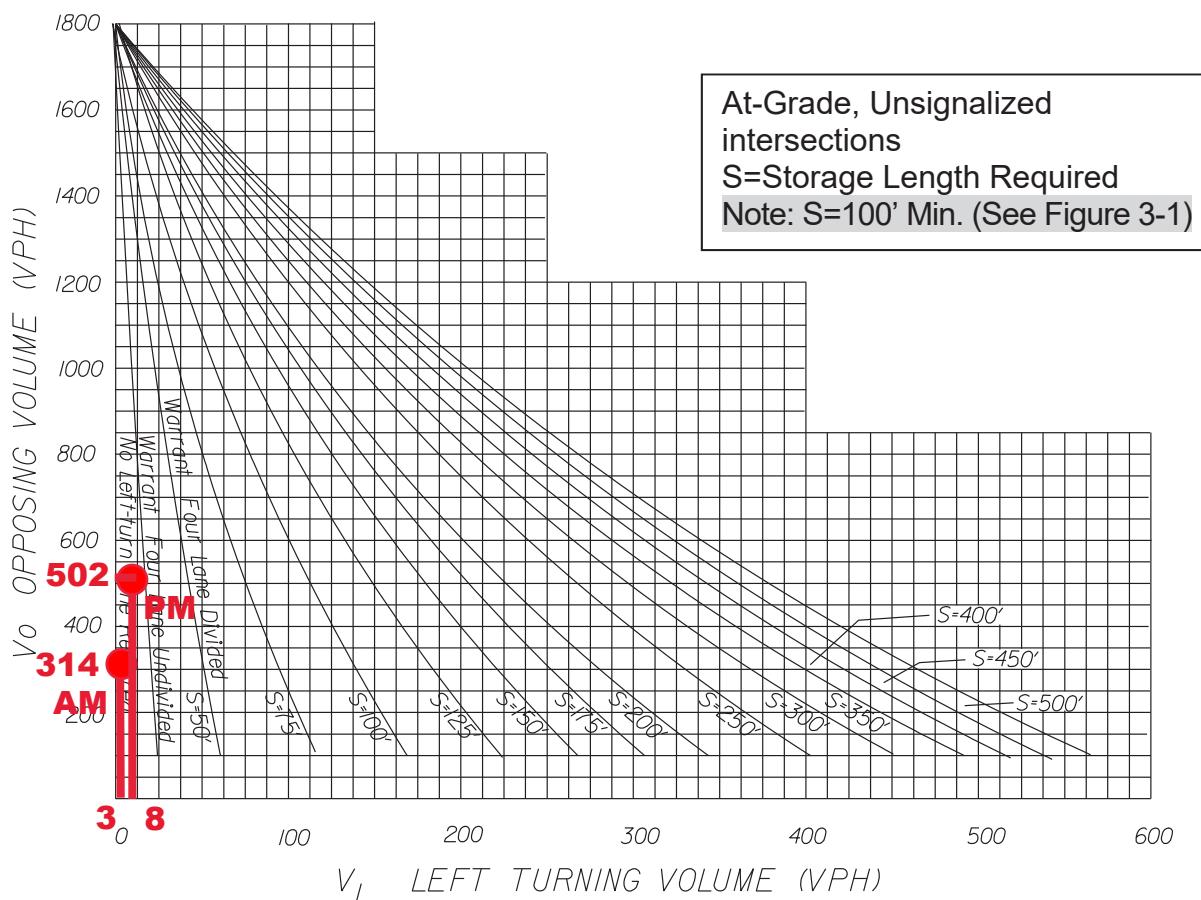
D = the percent of traffic in the peak direction of flow

Note: An average of 11% for K x D will suffice.

When right turn facilities are warranted, see Figure 3-1 for design criteria.\*

**FIGURE 3-27 WARRANTS FOR RIGHT TURN TREATMENT (4-LANE HIGHWAY)**

### Warrants for Left Turn Storage Lanes on Four-Lane Highways



**FIGURE 3-3 WARRANTS FOR LEFT TURN STORAGE LANES ON FOUR-LANE HIGHWAYS\***

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Opposing volume and left turning volume in vehicles per hour (VPH) are used for left turn storage lane warrants on four-lane highways.

For plan detail requirements when curb and/or gutter are used, see VDOT's Road Design Manual, Section 2E-3 on the VDOT web site:

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Left-turn lanes shall also be established on two-lane highways where traffic volumes are high enough to warrant them.

\* Rev. 1/18

## **Appendix F**

### **Synchro 10 & SimTraffic 10 Intersection Analysis Data**

## HCM 2010 Signalized Intersection Summary

1: N Main St &amp; Patrick Henry Dr

10/01/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑		↑↑			↑	↑↑		↑	↑↑	
Traffic Volume (veh/h)	77	60	92	59	92	21	47	162	22	51	477	106
Future Volume (veh/h)	77	60	92	59	92	21	47	162	22	51	477	106
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Q <sub>b</sub> ), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A <sub>pbT</sub> )	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	87	67	103	66	103	24	53	182	25	57	536	119
Adj No. of Lanes	1	1	0	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	346	130	199	230	379	91	235	787	107	414	729	161
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.04	0.25	0.25	0.05	0.25	0.25
Sat Flow, veh/h	1774	663	1020	1176	1943	466	1774	3133	424	1774	2882	637
Grp Volume(v), veh/h	87	0	170	101	0	92	53	102	105	57	328	327
Grp Sat Flow(s),veh/h/ln	1774	0	1683	1804	0	1781	1774	1770	1788	1774	1770	1750
Q Serve(g_s), s	3.2	0.0	6.9	3.7	0.0	3.4	1.7	3.5	3.6	1.8	13.1	13.2
Cycle Q Clear(g_c), s	3.2	0.0	6.9	3.7	0.0	3.4	1.7	3.5	3.6	1.8	13.1	13.2
Prop In Lane	1.00		0.61	0.65		0.26	1.00		0.24	1.00		0.36
Lane Grp Cap(c), veh/h	346	0	329	352	0	348	235	445	449	414	448	443
V/C Ratio(X)	0.25	0.00	0.52	0.29	0.00	0.26	0.23	0.23	0.23	0.14	0.73	0.74
Avail Cap(c_a), veh/h	889	0	843	904	0	892	272	887	896	448	887	877
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.2	0.0	27.7	26.4	0.0	26.2	20.8	22.8	22.9	19.7	26.3	26.4
Incr Delay (d2), s/veh	0.4	0.0	1.3	0.4	0.0	0.4	0.5	0.3	0.3	0.1	2.3	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	3.3	1.9	0.0	1.7	0.8	1.8	1.8	0.9	6.7	6.7
LnGrp Delay(d),s/veh	26.5	0.0	28.9	26.8	0.0	26.6	21.3	23.1	23.1	19.8	28.7	28.8
LnGrp LOS	C		C			C	C	C	C	B	C	C
Approach Vol, veh/h	257			193			260			712		
Approach Delay, s/veh	28.1			26.7			22.8			28.0		
Approach LOS	C			C			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2	3	4		6	7	8					
Phs Duration (G+Y+R <sub>c</sub> ), s	21.5	8.0	25.8		21.5	7.9	25.9					
Change Period (Y+R <sub>c</sub> ), s	6.5	4.5	6.5		6.5	4.5	6.5					
Max Green Setting (Gmax), s	38.5	5.0	38.5		38.5	5.0	38.5					
Max Q Clear Time (g_c+l1), s	8.9	3.8	5.6		5.7	3.7	15.2					
Green Ext Time (p_c), s	1.3	0.0	1.2		1.2	0.0	4.3					
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			26.9									
HCM 2010 LOS			C									

## HCM 2010 Signalized Intersection Summary

6: Progress St &amp; Patrick Henry Dr

10/01/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	179	25	27	272	4	30	11	10	2	38	44
Future Volume (veh/h)	19	179	25	27	272	4	30	11	10	2	38	44
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Q <sub>b</sub> ), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A <sub>pbT</sub> )	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1773	1900	1900	1840	1900	1776	1900	1900	1900	1874	1900
Adj Flow Rate, veh/h	21	197	27	30	299	4	33	12	11	2	42	48
Adj No. of Lanes	0	2	0	0	2	1	1	1	0	1	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	4	4	4	1	1	0	7	0	0	0	3	3
Cap, veh/h	36	351	50	84	883	437	90	118	108	139	122	140
Arrive On Green	0.13	0.13	0.13	0.27	0.27	0.27	0.05	0.13	0.13	0.08	0.15	0.15
Sat Flow, veh/h	286	2779	397	311	3261	1615	1691	914	838	1810	799	913
Grp Volume(v), veh/h	129	0	116	176	153	4	33	0	23	2	0	90
Grp Sat Flow(s),veh/h/ln	1759	0	1703	1824	1748	1615	1691	0	1752	1810	0	1713
Q Serve(g_s), s	3.8	0.0	3.5	4.3	3.9	0.1	1.0	0.0	0.6	0.1	0.0	2.6
Cycle Q Clear(g_c), s	3.8	0.0	3.5	4.3	3.9	0.1	1.0	0.0	0.6	0.1	0.0	2.6
Prop In Lane	0.16		0.23	0.17		1.00	1.00		0.48	1.00		0.53
Lane Grp Cap(c), veh/h	222	0	215	494	473	437	90	0	226	139	0	262
V/C Ratio(X)	0.58	0.00	0.54	0.36	0.32	0.01	0.37	0.00	0.10	0.01	0.00	0.34
Avail Cap(c_a), veh/h	777	0	753	806	773	714	488	0	569	522	0	556
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.8	0.0	22.7	16.3	16.2	14.8	25.3	0.0	21.3	23.6	0.0	21.0
Incr Delay (d2), s/veh	2.4	0.0	2.1	0.4	0.4	0.0	2.5	0.0	0.2	0.0	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	1.8	2.2	1.9	0.0	0.5	0.0	0.3	0.0	0.0	1.3
LnGrp Delay(d),s/veh	25.2	0.0	24.8	16.8	16.5	14.8	27.8	0.0	21.5	23.7	0.0	21.8
LnGrp LOS	C		C	B	B	B	C		C	C		C
Approach Vol, veh/h	245				333			56			92	
Approach Delay, s/veh	25.0				16.6			25.2			21.8	
Approach LOS	C				B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2	3	4		6	7	8					
Phs Duration (G+Y+R <sub>c</sub> ), s	12.5	9.8	12.7		20.5	8.5	14.0					
Change Period (Y+R <sub>c</sub> ), s	5.5	5.5	5.5		5.5	5.5	5.5					
Max Green Setting (Gmax), s	24.5	16.0	18.0		24.5	16.0	18.0					
Max Q Clear Time (g_c+l1), s	5.8	2.1	2.6		6.3	3.0	4.6					
Green Ext Time (p_c), s	1.3	0.0	0.0		1.8	0.0	0.3					
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				20.8								
HCM 2010 LOS				C								

### Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	8:15	8:15	8:15	8:15	8:15	8:15	8:15
End Time	9:30	9:30	9:30	9:30	9:30	9:30	9:30
Total Time (min)	75	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	630	657	648	669	658	622	659
Vehs Exited	631	668	648	674	657	623	658
Starting Vehs	5	16	5	12	6	4	7
Ending Vehs	4	5	5	7	7	3	8
Travel Distance (mi)	124	131	127	132	130	123	129
Travel Time (hr)	7.6	8.1	8.2	8.3	8.1	7.8	8.1
Total Delay (hr)	2.7	2.8	3.1	3.0	2.9	2.8	2.9
Total Stops	422	444	451	473	469	436	460
Fuel Used (gal)	5.5	5.8	5.7	5.9	5.7	5.4	5.8

### Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	8:15	8:15	8:15	8:15
End Time	9:30	9:30	9:30	9:30
Total Time (min)	75	75	75	75
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	661	660	604	649
Vehs Exited	661	657	598	648
Starting Vehs	7	4	4	6
Ending Vehs	7	7	10	4
Travel Distance (mi)	130	130	118	127
Travel Time (hr)	8.1	8.1	7.3	8.0
Total Delay (hr)	2.9	2.8	2.5	2.8
Total Stops	471	460	414	452
Fuel Used (gal)	5.7	5.7	5.2	5.6

### Interval #0 Information Seeding

Start Time	8:15
End Time	8:30
Total Time (min)	15
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

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**Interval #1 Information Recording**

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Start Time 8:30

End Time 9:30

Total Time (min) 60

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	630	657	648	669	658	622	659
Vehs Exited	631	668	648	674	657	623	658
Starting Vehs	5	16	5	12	6	4	7
Ending Vehs	4	5	5	7	7	3	8
Travel Distance (mi)	124	131	127	132	130	123	129
Travel Time (hr)	7.6	8.1	8.2	8.3	8.1	7.8	8.1
Total Delay (hr)	2.7	2.8	3.1	3.0	2.9	2.8	2.9
Total Stops	422	444	451	473	469	436	460
Fuel Used (gal)	5.5	5.8	5.7	5.9	5.7	5.4	5.8

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**Interval #1 Information Recording**

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Start Time 8:30

End Time 9:30

Total Time (min) 60

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	661	660	604	649
Vehs Exited	661	657	598	648
Starting Vehs	7	4	4	6
Ending Vehs	7	7	10	4
Travel Distance (mi)	130	130	118	127
Travel Time (hr)	8.1	8.1	7.3	8.0
Total Delay (hr)	2.9	2.8	2.5	2.8
Total Stops	471	460	414	452
Fuel Used (gal)	5.7	5.7	5.2	5.6

# Queuing and Blocking Report

Baseline

07/23/2018

## Intersection: 6: Progress St & Patrick Henry Dr

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	T	R	L	TR	L	TR
Maximum Queue (ft)	132	90	148	87	30	74	49	22	87
Average Queue (ft)	73	28	77	22	3	26	14	1	34
95th Queue (ft)	115	69	127	61	16	63	41	11	67
Link Distance (ft)	466	466	525	525			460		447
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)					225	100		150	
Storage Blk Time (%)					0		0		0
Queuing Penalty (veh)					0		0		0

## Network Summary

Network wide Queuing Penalty: 0

## HCM 2010 Signalized Intersection Summary

1: N Main St &amp; Patrick Henry Dr

10/01/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑		↑↑		↑↑	↑	↑↑		↑	↑↑	
Traffic Volume (veh/h)	129	165	149	52	173	43	140	394	83	74	371	149
Future Volume (veh/h)	129	165	149	52	173	43	140	394	83	74	371	149
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Q <sub>b</sub> ), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	0.99		0.98	0.99		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1900	1900	1845	1900	1881	1869	1900	1900	1863	1900
Adj Flow Rate, veh/h	137	176	159	55	184	46	149	419	88	79	395	159
Adj No. of Lanes	1	1	0	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	0	0	4	4	4	1	2	2	0	2	2
Cap, veh/h	417	215	194	95	328	85	309	755	157	305	546	217
Arrive On Green	0.24	0.24	0.24	0.14	0.14	0.14	0.09	0.26	0.26	0.05	0.22	0.22
Sat Flow, veh/h	1774	913	824	659	2277	589	1792	2915	607	1810	2448	970
Grp Volume(v), veh/h	137	0	335	151	0	134	149	254	253	79	284	270
Grp Sat Flow(s),veh/h/ln	1774	0	1737	1812	0	1713	1792	1776	1746	1810	1770	1649
Q Serve(g_s), s	5.1	0.0	14.5	6.2	0.0	5.7	4.9	9.8	9.9	2.6	11.7	12.0
Cycle Q Clear(g_c), s	5.1	0.0	14.5	6.2	0.0	5.7	4.9	9.8	9.9	2.6	11.7	12.0
Prop In Lane	1.00		0.47	0.36		0.34	1.00		0.35	1.00		0.59
Lane Grp Cap(c), veh/h	417	0	408	261	0	247	309	460	452	305	395	368
V/C Ratio(X)	0.33	0.00	0.82	0.58	0.00	0.54	0.48	0.55	0.56	0.26	0.72	0.73
Avail Cap(c_a), veh/h	651	0	637	665	0	628	582	865	850	645	862	803
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.1	0.0	28.7	31.6	0.0	31.4	21.6	25.3	25.4	22.1	28.4	28.5
Incr Delay (d2), s/veh	0.5	0.0	4.9	2.0	0.0	1.8	1.2	1.0	1.1	0.4	2.5	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	7.4	3.2	0.0	2.8	2.5	4.9	4.9	1.3	6.0	5.8
LnGrp Delay(d),s/veh	25.5	0.0	33.5	33.6	0.0	33.3	22.7	26.4	26.5	22.5	30.9	31.4
LnGrp LOS	C		C			C	C	C	C	C	C	C
Approach Vol, veh/h	472			285			656			633		
Approach Delay, s/veh	31.2			33.5			25.6			30.1		
Approach LOS	C			C			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2	3	4		6	7	8					
Phs Duration (G+Y+R <sub>c</sub> ), s	24.6	10.1	27.0		17.4	12.9	24.1					
Change Period (Y+R <sub>c</sub> ), s	6.0	6.0	6.5		6.0	6.0	6.5					
Max Green Setting (Gmax), s	29.0	19.0	38.5		29.0	19.0	38.5					
Max Q Clear Time (g_c+l1), s	16.5	4.6	11.9		8.2	6.9	14.0					
Green Ext Time (p_c), s	2.1	0.1	3.1		1.7	0.3	3.4					
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			29.4									
HCM 2010 LOS			C									

## HCM 2010 Signalized Intersection Summary

6: Progress St &amp; Patrick Henry Dr

10/01/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	375	59	46	408	12	72	25	72	7	16	28
Future Volume (veh/h)	52	375	59	46	408	12	72	25	72	7	16	28
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Q <sub>b</sub> ), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1879	1900	1900	1850	1900	1727	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	54	387	61	47	421	12	74	26	74	7	16	29
Adj No. of Lanes	0	2	0	0	2	1	1	1	0	1	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	2	2	0	10	0	0	0	0	0
Cap, veh/h	78	583	96	79	745	358	121	66	189	124	91	164
Arrive On Green	0.21	0.21	0.21	0.23	0.23	0.23	0.07	0.16	0.16	0.07	0.15	0.15
Sat Flow, veh/h	376	2797	461	344	3246	1559	1645	425	1210	1810	598	1084
Grp Volume(v), veh/h	267	0	235	250	218	12	74	0	100	7	0	45
Grp Sat Flow(s),veh/h/ln	1861	0	1774	1833	1757	1559	1645	0	1635	1810	0	1683
Q Serve(g_s), s	8.7	0.0	7.9	8.0	7.1	0.4	2.9	0.0	3.6	0.2	0.0	1.5
Cycle Q Clear(g_c), s	8.7	0.0	7.9	8.0	7.1	0.4	2.9	0.0	3.6	0.2	0.0	1.5
Prop In Lane	0.20		0.26	0.19		1.00	1.00		0.74	1.00		0.64
Lane Grp Cap(c), veh/h	388	0	370	421	404	358	121	0	256	124	0	255
V/C Ratio(X)	0.69	0.00	0.63	0.59	0.54	0.03	0.61	0.00	0.39	0.06	0.00	0.18
Avail Cap(c_a), veh/h	698	0	665	687	659	585	403	0	451	443	0	464
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.9	0.0	23.6	22.4	22.1	19.5	29.3	0.0	24.8	28.4	0.0	24.2
Incr Delay (d2), s/veh	2.2	0.0	1.8	1.3	1.1	0.0	4.9	0.0	1.0	0.2	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	4.0	4.2	3.6	0.2	1.5	0.0	1.7	0.1	0.0	0.7
LnGrp Delay(d),s/veh	26.1	0.0	25.4	23.8	23.3	19.6	34.2	0.0	25.7	28.6	0.0	24.5
LnGrp LOS	C		C	C	C	B	C		C	C		C
Approach Vol, veh/h	502				480				174			52
Approach Delay, s/veh	25.8				23.4				29.4			25.0
Approach LOS	C				C				C			C
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2	3	4		6	7	8					
Phs Duration (G+Y+R <sub>c</sub> ), s	19.1	10.0	15.7		20.5	10.3	15.4					
Change Period (Y+R <sub>c</sub> ), s	5.5	5.5	5.5		5.5	5.5	5.5					
Max Green Setting (Gmax), s	24.5	16.0	18.0		24.5	16.0	18.0					
Max Q Clear Time (g_c+l1), s	10.7	2.2	5.6		10.0	4.9	3.5					
Green Ext Time (p_c), s	2.7	0.0	0.4		2.5	0.1	0.1					
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				25.3								
HCM 2010 LOS				C								

### Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	4:45	4:45	4:45	4:45	4:45	4:45	4:45
End Time	6:00	6:00	6:00	6:00	6:00	6:00	6:00
Total Time (min)	75	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	2208	2207	2194	2221	2144	2206	2233
Vehs Exited	2225	2223	2204	2220	2158	2191	2223
Starting Vehs	71	57	55	60	68	52	53
Ending Vehs	54	41	45	61	54	67	63
Travel Distance (mi)	801	790	784	792	770	794	800
Travel Time (hr)	56.6	57.3	54.3	55.6	53.8	56.7	57.0
Total Delay (hr)	25.1	26.3	23.5	24.4	23.5	25.4	25.5
Total Stops	2391	2369	2327	2321	2301	2414	2402
Fuel Used (gal)	35.5	35.5	35.0	35.0	34.1	35.4	36.0

### Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	4:45	4:45	4:45	4:45
End Time	6:00	6:00	6:00	6:00
Total Time (min)	75	75	75	75
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	2227	2147	2153	2194
Vehs Exited	2240	2137	2151	2197
Starting Vehs	65	55	46	58
Ending Vehs	52	65	48	55
Travel Distance (mi)	799	769	777	788
Travel Time (hr)	57.5	55.4	53.9	55.8
Total Delay (hr)	26.3	25.1	23.3	24.8
Total Stops	2389	2311	2279	2352
Fuel Used (gal)	36.0	34.2	34.8	35.1

### Interval #0 Information Seeding

Start Time	4:45
End Time	5:00
Total Time (min)	15
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

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**Interval #1 Information Recording**

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Start Time 5:00

End Time 6:00

Total Time (min) 60

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2208	2207	2194	2221	2144	2206	2233
Vehs Exited	2225	2223	2204	2220	2158	2191	2223
Starting Vehs	71	57	55	60	68	52	53
Ending Vehs	54	41	45	61	54	67	63
Travel Distance (mi)	801	790	784	792	770	794	800
Travel Time (hr)	56.6	57.3	54.3	55.6	53.8	56.7	57.0
Total Delay (hr)	25.1	26.3	23.5	24.4	23.5	25.4	25.5
Total Stops	2391	2369	2327	2321	2301	2414	2402
Fuel Used (gal)	35.5	35.5	35.0	35.0	34.1	35.4	36.0

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**Interval #1 Information Recording**

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Start Time 5:00

End Time 6:00

Total Time (min) 60

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2227	2147	2153	2194
Vehs Exited	2240	2137	2151	2197
Starting Vehs	65	55	46	58
Ending Vehs	52	65	48	55
Travel Distance (mi)	799	769	777	788
Travel Time (hr)	57.5	55.4	53.9	55.8
Total Delay (hr)	26.3	25.1	23.3	24.8
Total Stops	2389	2311	2279	2352
Fuel Used (gal)	36.0	34.2	34.8	35.1

# Queuing and Blocking Report

Baseline

10/01/2018

## Intersection: 1: N Main St & Patrick Henry Dr

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	LT	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	188	342	211	175	150	239	214	176	253	233
Average Queue (ft)	84	178	120	60	81	130	106	46	141	121
95th Queue (ft)	153	299	195	143	149	218	190	103	220	213
Link Distance (ft)	2120	2120	454	454		466	466		454	454
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)					150			250		
Storage Blk Time (%)					0	5		0	0	
Queuing Penalty (veh)					1	7		0	0	

## Intersection: 6: Progress St & Patrick Henry Dr

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	T	R	L	TR	L	TR
Maximum Queue (ft)	210	193	186	188	52	98	148	33	61
Average Queue (ft)	125	88	99	105	8	50	46	6	21
95th Queue (ft)	188	160	163	167	38	91	96	24	47
Link Distance (ft)	466	466	2120	2120			460		447
Upstream Blk Time (%)					225	100		150	
Queuing Penalty (veh)					0	2		1	
Storage Bay Dist (ft)					0	2		0	
Storage Blk Time (%)									
Queuing Penalty (veh)									

## Network Summary

Network wide Queuing Penalty: 10

## HCM 2010 Signalized Intersection Summary

1: N Main St &amp; Patrick Henry Dr

10/01/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑		↑↑			↑	↑↑		↑	↑↑	
Traffic Volume (veh/h)	78	61	93	60	93	21	47	164	22	52	482	107
Future Volume (veh/h)	78	61	93	60	93	21	47	164	22	52	482	107
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Q <sub>b</sub> ), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A <sub>pbT</sub> )	1.00		0.94	1.00		0.93	0.99		0.96	0.97		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1877	1900	1900	1782	1900	1900	1776	1900	1827	1843	1900
Adj Flow Rate, veh/h	88	69	104	67	104	24	53	184	25	58	542	120
Adj No. of Lanes	1	1	0	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	4	0	0	8	8	8	0	6	6	4	2	2
Cap, veh/h	308	115	174	176	287	68	259	787	105	428	756	166
Arrive On Green	0.18	0.18	0.18	0.16	0.16	0.16	0.05	0.26	0.26	0.05	0.27	0.27
Sat Flow, veh/h	1740	651	981	1126	1834	434	1810	2977	397	1740	2834	624
Grp Volume(v), veh/h	88	0	173	103	0	92	53	103	106	58	334	328
Grp Sat Flow(s),veh/h/ln	1740	0	1632	1726	0	1668	1810	1688	1686	1740	1751	1707
Q Serve(g_s), s	3.0	0.0	6.8	3.7	0.0	3.4	1.4	3.3	3.4	1.6	12.0	12.1
Cycle Q Clear(g_c), s	3.0	0.0	6.8	3.7	0.0	3.4	1.4	3.3	3.4	1.6	12.0	12.1
Prop In Lane	1.00		0.60	0.65		0.26	1.00		0.24	1.00		0.37
Lane Grp Cap(c), veh/h	308	0	289	270	0	261	259	446	446	428	467	455
V/C Ratio(X)	0.29	0.00	0.60	0.38	0.00	0.35	0.20	0.23	0.24	0.14	0.72	0.72
Avail Cap(c_a), veh/h	728	0	683	722	0	698	672	938	937	820	973	949
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.7	0.0	26.2	26.2	0.0	26.1	18.1	20.0	20.0	17.0	23.0	23.1
Incr Delay (d2), s/veh	0.5	0.0	2.0	0.9	0.0	0.8	0.4	0.3	0.3	0.1	2.1	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	3.2	1.8	0.0	1.6	0.7	1.6	1.6	0.8	6.0	5.9
LnGrp Delay(d),s/veh	25.2	0.0	28.2	27.1	0.0	26.9	18.5	20.2	20.3	17.2	25.1	25.2
LnGrp LOS	C		C	C		C	B	C	C	B	C	C
Approach Vol, veh/h		261			195			262			720	
Approach Delay, s/veh		27.2			27.0			19.9			24.5	
Approach LOS		C			C			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+R <sub>c</sub> ), s	18.3	9.4	24.8		16.8	9.2	25.0					
Change Period (Y+R <sub>c</sub> ), s	6.0	6.0	6.5		6.0	6.0	6.5					
Max Green Setting (Gmax), s	29.0	19.0	38.5		29.0	19.0	38.5					
Max Q Clear Time (g_c+l1), s	8.8	3.6	5.4		5.7	3.4	14.1					
Green Ext Time (p_c), s	1.2	0.1	1.2		1.1	0.1	4.4					
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			24.5									
HCM 2010 LOS			C									

## HCM 2010 Signalized Intersection Summary

6: Progress St &amp; Patrick Henry Dr

10/01/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	198	25	31	275	4	31	12	12	2	39	44
Future Volume (veh/h)	21	198	25	31	275	4	31	12	12	2	39	44
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Q <sub>b</sub> ), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A <sub>pbT</sub> )	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1777	1900	1900	1835	1900	1776	1900	1900	1900	1873	1900
Adj Flow Rate, veh/h	23	218	27	34	302	4	34	13	13	2	43	48
Adj No. of Lanes	0	2	0	0	2	1	1	1	0	1	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	4	4	4	1	1	0	7	0	0	0	3	3
Cap, veh/h	39	381	49	92	860	432	93	113	113	139	122	136
Arrive On Green	0.13	0.13	0.13	0.27	0.27	0.27	0.06	0.13	0.13	0.08	0.15	0.15
Sat Flow, veh/h	287	2824	365	344	3218	1615	1691	873	873	1810	810	904
Grp Volume(v), veh/h	141	0	127	180	156	4	34	0	26	2	0	91
Grp Sat Flow(s),veh/h/ln	1763	0	1713	1818	1743	1615	1691	0	1746	1810	0	1714
Q Serve(g_s), s	4.2	0.0	3.9	4.5	4.0	0.1	1.1	0.0	0.7	0.1	0.0	2.7
Cycle Q Clear(g_c), s	4.2	0.0	3.9	4.5	4.0	0.1	1.1	0.0	0.7	0.1	0.0	2.7
Prop In Lane	0.16		0.21	0.19		1.00	1.00		0.50	1.00		0.53
Lane Grp Cap(c), veh/h	238	0	231	486	466	432	93	0	225	139	0	258
V/C Ratio(X)	0.59	0.00	0.55	0.37	0.34	0.01	0.36	0.00	0.12	0.01	0.00	0.35
Avail Cap(c_a), veh/h	770	0	748	794	761	705	482	0	560	516	0	550
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.8	0.0	22.7	16.7	16.5	15.1	25.6	0.0	21.6	23.9	0.0	21.4
Incr Delay (d2), s/veh	2.4	0.0	2.0	0.5	0.4	0.0	2.4	0.0	0.2	0.0	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	2.0	2.3	2.0	0.0	0.6	0.0	0.4	0.0	0.0	1.3
LnGrp Delay(d),s/veh	25.2	0.0	24.7	17.2	17.0	15.1	27.9	0.0	21.8	24.0	0.0	22.2
LnGrp LOS	C		C	B	B	B	C		C	C		C
Approach Vol, veh/h	268			340			60			93		
Approach Delay, s/veh	25.0			17.1			25.3			22.2		
Approach LOS	C			B			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2	3	4		6	7	8					
Phs Duration (G+Y+R <sub>c</sub> ), s	13.1	9.8	12.7		20.5	8.6	14.0					
Change Period (Y+R <sub>c</sub> ), s	5.5	5.5	5.5		5.5	5.5	5.5					
Max Green Setting (Gmax), s	24.5	16.0	18.0		24.5	16.0	18.0					
Max Q Clear Time (g_c+l1), s	6.2	2.1	2.7		6.5	3.1	4.7					
Green Ext Time (p_c), s	1.5	0.0	0.1		1.9	0.0	0.3					
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay	21.1											
HCM 2010 LOS	C											

### Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	8:15	8:15	8:15	8:15	8:15	8:15	8:15
End Time	9:30	9:30	9:30	9:30	9:30	9:30	9:30
Total Time (min)	75	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	1447	1510	1502	1520	1498	1570	1498
Vehs Exited	1442	1519	1503	1535	1499	1561	1491
Starting Vehs	21	33	28	41	26	21	23
Ending Vehs	26	24	27	26	25	30	30
Travel Distance (mi)	447	478	463	494	460	504	483
Travel Time (hr)	26.2	28.9	27.7	30.1	28.5	31.4	29.5
Total Delay (hr)	9.2	10.7	10.1	11.3	10.9	12.1	11.0
Total Stops	1264	1356	1275	1370	1322	1462	1380
Fuel Used (gal)	18.8	20.2	19.7	20.8	19.8	21.4	20.4

### Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	8:15	8:15	8:15	8:15
End Time	9:30	9:30	9:30	9:30
Total Time (min)	75	75	75	75
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	1499	1569	1465	1506
Vehs Exited	1491	1555	1445	1503
Starting Vehs	26	24	25	24
Ending Vehs	34	38	45	27
Travel Distance (mi)	478	494	455	476
Travel Time (hr)	28.4	30.1	27.3	28.8
Total Delay (hr)	10.1	11.3	10.0	10.7
Total Stops	1315	1406	1268	1343
Fuel Used (gal)	20.0	21.0	19.2	20.1

### Interval #0 Information Seeding

Start Time	8:15
End Time	8:30
Total Time (min)	15
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

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**Interval #1 Information Recording**

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Start Time 8:30

End Time 9:30

Total Time (min) 60

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1447	1510	1502	1520	1498	1570	1498
Vehs Exited	1442	1519	1503	1535	1499	1561	1491
Starting Vehs	21	33	28	41	26	21	23
Ending Vehs	26	24	27	26	25	30	30
Travel Distance (mi)	447	478	463	494	460	504	483
Travel Time (hr)	26.2	28.9	27.7	30.1	28.5	31.4	29.5
Total Delay (hr)	9.2	10.7	10.1	11.3	10.9	12.1	11.0
Total Stops	1264	1356	1275	1370	1322	1462	1380
Fuel Used (gal)	18.8	20.2	19.7	20.8	19.8	21.4	20.4

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**Interval #1 Information Recording**

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Start Time 8:30

End Time 9:30

Total Time (min) 60

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1499	1569	1465	1506
Vehs Exited	1491	1555	1445	1503
Starting Vehs	26	24	25	24
Ending Vehs	34	38	45	27
Travel Distance (mi)	478	494	455	476
Travel Time (hr)	28.4	30.1	27.3	28.8
Total Delay (hr)	10.1	11.3	10.0	10.7
Total Stops	1315	1406	1268	1343
Fuel Used (gal)	20.0	21.0	19.2	20.1

# Queuing and Blocking Report

## Baseline

10/01/2018

### Intersection: 1: N Main St & Patrick Henry Dr

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	LT	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	111	151	175	114	88	134	77	83	229	201
Average Queue (ft)	47	66	86	26	31	61	26	30	136	104
95th Queue (ft)	93	122	147	73	68	112	62	65	209	188
Link Distance (ft)	2120	2120	454	454		466	466		454	454
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)					150			250		
Storage Blk Time (%)					0	0			0	
Queuing Penalty (veh)					0	0			0	

### Intersection: 6: Progress St & Patrick Henry Dr

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	T	R	L	TR	L	TR
Maximum Queue (ft)	121	115	122	109	31	72	52	20	89
Average Queue (ft)	63	44	55	53	3	25	17	2	33
95th Queue (ft)	104	86	96	96	19	59	45	11	67
Link Distance (ft)	466	466	2120	2120			460		447
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)					225	100		150	
Storage Blk Time (%)					0				
Queuing Penalty (veh)					0				

## Network Summary

Network wide Queuing Penalty: 0

## HCM 2010 Signalized Intersection Summary

1: N Main St &amp; Patrick Henry Dr

10/01/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗ ↘ ↙ ↖ ↗ ↘ ↙ ↖ ↗ ↘ ↙ ↖											
Traffic Volume (veh/h)	130	167	150	53	175	43	141	398	84	75	375	150
Future Volume (veh/h)	130	167	150	53	175	43	141	398	84	75	375	150
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Q <sub>b</sub> ), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A <sub>pbT</sub> )	1.00			0.98	1.00		0.96	0.99		0.98	0.99	0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1900	1900	1845	1900	1881	1869	1900	1900	1863	1900
Adj Flow Rate, veh/h	138	178	160	56	186	46	150	423	89	80	399	160
Adj No. of Lanes	1	1	0	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	0	0	4	4	4	1	2	2	0	2	2
Cap, veh/h	419	216	194	96	329	84	307	757	158	303	548	216
Arrive On Green	0.24	0.24	0.24	0.14	0.14	0.14	0.09	0.26	0.26	0.05	0.22	0.22
Sat Flow, veh/h	1774	915	822	664	2279	583	1792	2914	608	1810	2451	968
Grp Volume(v), veh/h	138	0	338	153	0	135	150	256	256	80	286	273
Grp Sat Flow(s),veh/h/ln	1774	0	1737	1812	0	1714	1792	1776	1746	1810	1770	1650
Q Serve(g_s), s	5.1	0.0	14.7	6.3	0.0	5.8	5.0	9.9	10.1	2.7	11.9	12.2
Cycle Q Clear(g_c), s	5.1	0.0	14.7	6.3	0.0	5.8	5.0	9.9	10.1	2.7	11.9	12.2
Prop In Lane	1.00		0.47	0.37		0.34	1.00		0.35	1.00		0.59
Lane Grp Cap(c), veh/h	419	0	411	262	0	248	307	461	453	303	396	369
V/C Ratio(X)	0.33	0.00	0.82	0.58	0.00	0.55	0.49	0.56	0.56	0.26	0.72	0.74
Avail Cap(c_a), veh/h	646	0	632	659	0	624	577	858	844	640	855	797
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.2	0.0	28.8	31.8	0.0	31.7	21.7	25.5	25.6	22.2	28.7	28.8
Incr Delay (d2), s/veh	0.5	0.0	5.2	2.1	0.0	1.9	1.2	1.1	1.1	0.5	2.5	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	7.6	3.3	0.0	2.9	2.6	5.0	5.0	1.4	6.1	5.8
LnGrp Delay(d),s/veh	25.6	0.0	34.0	33.9	0.0	33.5	22.9	26.6	26.7	22.7	31.2	31.7
LnGrp LOS	C		C	C		C	C	C	C	C	C	C
Approach Vol, veh/h	476				288			662			639	
Approach Delay, s/veh	31.6				33.7			25.8			30.3	
Approach LOS	C				C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2	3	4		6	7	8					
Phs Duration (G+Y+R <sub>c</sub> ), s	24.8	10.1	27.2		17.5	13.0	24.3					
Change Period (Y+R <sub>c</sub> ), s	6.0	6.0	6.5		6.0	6.0	6.5					
Max Green Setting (Gmax), s	29.0	19.0	38.5		29.0	19.0	38.5					
Max Q Clear Time (g_c+l1), s	16.7	4.7	12.1		8.3	7.0	14.2					
Green Ext Time (p_c), s	2.1	0.1	3.1		1.7	0.3	3.5					
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				29.6								
HCM 2010 LOS				C								

## HCM 2010 Signalized Intersection Summary

6: Progress St &amp; Patrick Henry Dr

10/01/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	405	60	67	412	12	77	27	81	7	20	28
Future Volume (veh/h)	55	405	60	67	412	12	77	27	81	7	20	28
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Q <sub>b</sub> ), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1880	1900	1900	1845	1900	1727	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	57	418	62	69	425	12	79	28	84	7	21	29
Adj No. of Lanes	0	2	0	0	2	1	1	1	0	1	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	2	2	0	10	0	0	0	0	0
Cap, veh/h	80	613	95	107	698	351	126	65	194	125	108	149
Arrive On Green	0.22	0.22	0.22	0.23	0.23	0.23	0.08	0.16	0.16	0.07	0.15	0.15
Sat Flow, veh/h	371	2831	440	477	3098	1558	1645	408	1225	1810	715	987
Grp Volume(v), veh/h	286	0	251	264	230	12	79	0	112	7	0	50
Grp Sat Flow(s),veh/h/ln	1862	0	1780	1821	1753	1558	1645	0	1633	1810	0	1702
Q Serve(g_s), s	9.5	0.0	8.6	8.7	7.8	0.4	3.1	0.0	4.1	0.2	0.0	1.7
Cycle Q Clear(g_c), s	9.5	0.0	8.6	8.7	7.8	0.4	3.1	0.0	4.1	0.2	0.0	1.7
Prop In Lane	0.20		0.25	0.26		1.00	1.00		0.75	1.00		0.58
Lane Grp Cap(c), veh/h	403	0	385	411	395	351	126	0	259	125	0	257
V/C Ratio(X)	0.71	0.00	0.65	0.64	0.58	0.03	0.63	0.00	0.43	0.06	0.00	0.19
Avail Cap(c_a), veh/h	686	0	656	671	646	574	396	0	442	435	0	461
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.1	0.0	23.8	23.3	23.0	20.1	29.8	0.0	25.3	28.9	0.0	24.7
Incr Delay (d2), s/veh	2.3	0.0	1.9	1.7	1.4	0.0	5.1	0.0	1.1	0.2	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.0	4.4	4.6	3.9	0.2	1.6	0.0	1.9	0.1	0.0	0.8
LnGrp Delay(d),s/veh	26.4	0.0	25.6	25.0	24.3	20.1	34.9	0.0	26.4	29.1	0.0	25.1
LnGrp LOS	C		C	C	C	C	C		C	C		C
Approach Vol, veh/h	537				506				191			57
Approach Delay, s/veh	26.1				24.6				29.9			25.6
Approach LOS	C				C				C			C
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2	3	4		6	7	8					
Phs Duration (G+Y+R <sub>c</sub> ), s	19.9	10.1	16.0		20.5	10.6	15.5					
Change Period (Y+R <sub>c</sub> ), s	5.5	5.5	5.5		5.5	5.5	5.5					
Max Green Setting (Gmax), s	24.5	16.0	18.0		24.5	16.0	18.0					
Max Q Clear Time (g_c+l1), s	11.5	2.2	6.1		10.7	5.1	3.7					
Green Ext Time (p_c), s	2.8	0.0	0.4		2.6	0.1	0.1					
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			26.0									
HCM 2010 LOS			C									

### Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	4:45	4:45	4:45	4:45	4:45	4:45	4:45
End Time	6:00	6:00	6:00	6:00	6:00	6:00	6:00
Total Time (min)	75	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	2267	2203	2292	2312	2232	2210	2276
Vehs Exited	2269	2215	2302	2311	2245	2192	2272
Starting Vehs	56	65	67	54	69	46	62
Ending Vehs	54	53	57	55	56	64	66
Travel Distance (mi)	820	796	831	812	796	778	808
Travel Time (hr)	57.4	57.3	60.2	60.9	57.2	54.6	58.3
Total Delay (hr)	25.0	25.9	27.5	29.0	25.9	23.9	26.7
Total Stops	2431	2436	2474	2506	2452	2362	2453
Fuel Used (gal)	36.3	35.8	37.5	37.1	35.8	34.6	36.6

### Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	4:45	4:45	4:45	4:45
End Time	6:00	6:00	6:00	6:00
Total Time (min)	75	75	75	75
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	2290	2280	2362	2271
Vehs Exited	2276	2289	2345	2272
Starting Vehs	48	71	40	58
Ending Vehs	62	62	57	57
Travel Distance (mi)	832	826	822	812
Travel Time (hr)	60.3	60.5	58.4	58.5
Total Delay (hr)	27.4	27.9	26.2	26.6
Total Stops	2511	2542	2576	2472
Fuel Used (gal)	37.5	37.4	36.8	36.5

### Interval #0 Information Seeding

Start Time	4:45
End Time	5:00
Total Time (min)	15
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

# SimTraffic Simulation Summary

## Baseline

10/01/2018

### Interval #1 Information Recording

Start Time 5:00

End Time 6:00

Total Time (min) 60

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2267	2203	2292	2312	2232	2210	2276
Vehs Exited	2269	2215	2302	2311	2245	2192	2272
Starting Vehs	56	65	67	54	69	46	62
Ending Vehs	54	53	57	55	56	64	66
Travel Distance (mi)	820	796	831	812	796	778	808
Travel Time (hr)	57.4	57.3	60.2	60.9	57.2	54.6	58.3
Total Delay (hr)	25.0	25.9	27.5	29.0	25.9	23.9	26.7
Total Stops	2431	2436	2474	2506	2452	2362	2453
Fuel Used (gal)	36.3	35.8	37.5	37.1	35.8	34.6	36.6

### Interval #1 Information Recording

Start Time 5:00

End Time 6:00

Total Time (min) 60

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2290	2280	2362	2271
Vehs Exited	2276	2289	2345	2272
Starting Vehs	48	71	40	58
Ending Vehs	62	62	57	57
Travel Distance (mi)	832	826	822	812
Travel Time (hr)	60.3	60.5	58.4	58.5
Total Delay (hr)	27.4	27.9	26.2	26.6
Total Stops	2511	2542	2576	2472
Fuel Used (gal)	37.5	37.4	36.8	36.5

# Queuing and Blocking Report

Baseline

10/01/2018

## Intersection: 1: N Main St & Patrick Henry Dr

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	LT	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	178	392	228	189	150	287	241	152	248	243
Average Queue (ft)	85	190	126	68	87	137	110	50	144	125
95th Queue (ft)	156	337	196	152	157	233	197	106	221	213
Link Distance (ft)	2120	2120	454	454		466	466		454	454
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)					150		250			
Storage Blk Time (%)					0	6		0	0	
Queuing Penalty (veh)					1	8		0	0	

## Intersection: 6: Progress St & Patrick Henry Dr

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	T	R	L	TR	L	TR
Maximum Queue (ft)	230	211	198	198	34	97	124	34	56
Average Queue (ft)	134	103	109	112	8	53	46	5	19
95th Queue (ft)	203	181	176	177	29	94	91	23	46
Link Distance (ft)	466	466	2120	2120			460		447
Upstream Blk Time (%)					225	100		150	
Queuing Penalty (veh)					0	2		0	
Storage Bay Dist (ft)					0	2		0	
Storage Blk Time (%)									
Queuing Penalty (veh)									

## Network Summary

Network wide Queuing Penalty: 11

## HCM 2010 Signalized Intersection Summary

1: N Main St &amp; Patrick Henry Dr

11/20/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗ ↘ ↙ ↖ ↗ ↘ ↙ ↖ ↗ ↘ ↙ ↖											
Traffic Volume (veh/h)	79	63	100	60	95	21	49	164	22	52	482	107
Future Volume (veh/h)	79	63	100	60	95	21	49	164	22	52	482	107
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Q <sub>b</sub> ), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.94	1.00		0.93	0.99		0.96	0.97	0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1877	1900	1900	1782	1900	1900	1776	1900	1827	1843	1900
Adj Flow Rate, veh/h	89	71	112	67	107	24	55	184	25	58	542	120
Adj No. of Lanes	1	1	0	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	4	0	0	8	8	8	0	6	6	4	2	2
Cap, veh/h	316	115	181	174	292	67	258	786	105	426	753	166
Arrive On Green	0.18	0.18	0.18	0.16	0.16	0.16	0.05	0.26	0.26	0.05	0.27	0.27
Sat Flow, veh/h	1740	632	997	1109	1859	428	1810	2977	397	1740	2834	624
Grp Volume(v), veh/h	89	0	183	104	0	94	55	103	106	58	334	328
Grp Sat Flow(s),veh/h/ln	1740	0	1629	1727	0	1669	1810	1688	1686	1740	1751	1707
Q Serve(g_s), s	3.1	0.0	7.3	3.8	0.0	3.5	1.5	3.4	3.5	1.7	12.1	12.3
Cycle Q Clear(g_c), s	3.1	0.0	7.3	3.8	0.0	3.5	1.5	3.4	3.5	1.7	12.1	12.3
Prop In Lane	1.00			0.61	0.64		0.26	1.00		0.24	1.00	0.37
Lane Grp Cap(c), veh/h	316	0	296	271	0	262	258	446	446	426	465	453
V/C Ratio(X)	0.28	0.00	0.62	0.39	0.00	0.36	0.21	0.23	0.24	0.14	0.72	0.72
Avail Cap(c_a), veh/h	719	0	673	713	0	690	663	926	925	813	961	937
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.8	0.0	26.5	26.5	0.0	26.4	18.3	20.2	20.3	17.3	23.4	23.4
Incr Delay (d2), s/veh	0.5	0.0	2.1	0.9	0.0	0.8	0.4	0.3	0.3	0.1	2.1	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	3.4	1.9	0.0	1.7	0.8	1.6	1.7	0.8	6.1	6.0
LnGrp Delay(d),s/veh	25.3	0.0	28.6	27.4	0.0	27.3	18.7	20.5	20.5	17.4	25.5	25.6
LnGrp LOS	C		C	C		C	B	C	C	B	C	C
Approach Vol, veh/h	272				198			264			720	
Approach Delay, s/veh	27.5				27.4			20.1			24.9	
Approach LOS	C				C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2	3	4		6	7	8					
Phs Duration (G+Y+R <sub>c</sub> ), s	18.7	9.4	25.0		17.0	9.3	25.1					
Change Period (Y+R <sub>c</sub> ), s	6.0	6.0	6.5		6.0	6.0	6.5					
Max Green Setting (Gmax), s	29.0	19.0	38.5		29.0	19.0	38.5					
Max Q Clear Time (g_c+l1), s	9.3	3.7	5.5		5.8	3.5	14.3					
Green Ext Time (p_c), s	1.3	0.1	1.2		1.1	0.1	4.4					
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				24.9								
HCM 2010 LOS				C								

## HCM 2010 Signalized Intersection Summary

6: Progress St &amp; Patrick Henry Dr

11/20/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	201	25	40	280	4	31	12	15	2	39	44
Future Volume (veh/h)	21	201	25	40	280	4	31	12	15	2	39	44
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Q <sub>b</sub> ), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1778	1900	1900	1825	1900	1776	1900	1900	1900	1873	1900
Adj Flow Rate, veh/h	23	221	27	44	308	4	34	13	16	2	43	48
Adj No. of Lanes	0	2	0	0	2	1	1	1	0	1	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	4	4	4	1	1	0	7	0	0	0	3	3
Cap, veh/h	39	385	49	112	831	431	96	100	124	139	121	135
Arrive On Green	0.14	0.14	0.14	0.27	0.27	0.27	0.06	0.13	0.13	0.08	0.15	0.15
Sat Flow, veh/h	284	2833	361	422	3115	1615	1691	776	955	1810	810	904
Grp Volume(v), veh/h	143	0	128	188	164	4	34	0	29	2	0	91
Grp Sat Flow(s),veh/h/ln	1764	0	1714	1804	1733	1615	1691	0	1731	1810	0	1714
Q Serve(g_s), s	4.3	0.0	3.9	4.8	4.3	0.1	1.1	0.0	0.8	0.1	0.0	2.7
Cycle Q Clear(g_c), s	4.3	0.0	3.9	4.8	4.3	0.1	1.1	0.0	0.8	0.1	0.0	2.7
Prop In Lane	0.16		0.21	0.23		1.00	1.00		0.55	1.00		0.53
Lane Grp Cap(c), veh/h	240	0	233	481	462	431	96	0	224	139	0	256
V/C Ratio(X)	0.60	0.00	0.55	0.39	0.35	0.01	0.35	0.00	0.13	0.01	0.00	0.36
Avail Cap(c_a), veh/h	768	0	747	786	755	704	481	0	554	515	0	549
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.8	0.0	22.7	16.9	16.7	15.2	25.5	0.0	21.7	24.0	0.0	21.5
Incr Delay (d2), s/veh	2.4	0.0	2.0	0.5	0.5	0.0	2.2	0.0	0.3	0.0	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	2.0	2.4	2.1	0.0	0.6	0.0	0.4	0.0	0.0	1.3
LnGrp Delay(d),s/veh	25.2	0.0	24.7	17.4	17.2	15.2	27.7	0.0	21.9	24.0	0.0	22.3
LnGrp LOS	C		C	B	B	B	C		C	C		C
Approach Vol, veh/h	271				356			63			93	
Approach Delay, s/veh	25.0				17.3			25.1			22.4	
Approach LOS	C				B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2	3	4		6	7	8					
Phs Duration (G+Y+R <sub>c</sub> ), s	13.1	9.8	12.8		20.5	8.7	13.9					
Change Period (Y+R <sub>c</sub> ), s	5.5	5.5	5.5		5.5	5.5	5.5					
Max Green Setting (Gmax), s	24.5	16.0	18.0		24.5	16.0	18.0					
Max Q Clear Time (g_c+l1), s	6.3	2.1	2.8		6.8	3.1	4.7					
Green Ext Time (p_c), s	1.5	0.0	0.1		2.0	0.0	0.3					
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay	21.2											
HCM 2010 LOS	C											

### Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	8:15	8:15	8:15	8:15	8:15	8:15	8:15
End Time	9:30	9:30	9:30	9:30	9:30	9:30	9:30
Total Time (min)	75	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	1522	1553	1532	1625	1538	1501	1560
Vehs Exited	1511	1548	1540	1630	1543	1499	1548
Starting Vehs	29	34	40	37	26	22	23
Ending Vehs	40	39	32	32	21	24	35
Travel Distance (mi)	485	491	493	519	500	491	503
Travel Time (hr)	29.3	29.7	30.8	32.0	31.2	30.2	30.7
Total Delay (hr)	10.7	11.0	12.1	12.1	12.0	11.3	11.5
Total Stops	1376	1427	1424	1486	1466	1401	1436
Fuel Used (gal)	20.6	20.9	21.4	22.1	21.4	20.8	21.3

### Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	8:15	8:15	8:15	8:15
End Time	9:30	9:30	9:30	9:30
Total Time (min)	75	75	75	75
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	1558	1514	1497	1539
Vehs Exited	1550	1518	1490	1539
Starting Vehs	32	29	29	29
Ending Vehs	40	25	36	27
Travel Distance (mi)	498	489	469	494
Travel Time (hr)	31.3	30.7	28.9	30.5
Total Delay (hr)	12.3	12.0	11.0	11.6
Total Stops	1480	1463	1380	1431
Fuel Used (gal)	21.7	20.9	20.1	21.1

### Interval #0 Information Seeding

Start Time	8:15
End Time	8:30
Total Time (min)	15
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

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**Interval #1 Information Recording**

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Start Time 8:30

End Time 9:30

Total Time (min) 60

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1522	1553	1532	1625	1538	1501	1560
Vehs Exited	1511	1548	1540	1630	1543	1499	1548
Starting Vehs	29	34	40	37	26	22	23
Ending Vehs	40	39	32	32	21	24	35
Travel Distance (mi)	485	491	493	519	500	491	503
Travel Time (hr)	29.3	29.7	30.8	32.0	31.2	30.2	30.7
Total Delay (hr)	10.7	11.0	12.1	12.1	12.0	11.3	11.5
Total Stops	1376	1427	1424	1486	1466	1401	1436
Fuel Used (gal)	20.6	20.9	21.4	22.1	21.4	20.8	21.3

**Interval #1 Information Recording**

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Start Time 8:30

End Time 9:30

Total Time (min) 60

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1558	1514	1497	1539
Vehs Exited	1550	1518	1490	1539
Starting Vehs	32	29	29	29
Ending Vehs	40	25	36	27
Travel Distance (mi)	498	489	469	494
Travel Time (hr)	31.3	30.7	28.9	30.5
Total Delay (hr)	12.3	12.0	11.0	11.6
Total Stops	1480	1463	1380	1431
Fuel Used (gal)	21.7	20.9	20.1	21.1

# Queuing and Blocking Report

## Baseline

11/20/2018

### Intersection: 1: N Main St & Patrick Henry Dr

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	LT	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	123	180	173	136	86	141	101	77	248	225
Average Queue (ft)	49	76	90	29	33	63	29	30	146	108
95th Queue (ft)	103	140	152	80	69	116	73	65	224	197
Link Distance (ft)	2120	2120	454	454		466	466		454	454
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)					150			250		
Storage Blk Time (%)						0	0			0
Queuing Penalty (veh)						0	0			0

### Intersection: 6: Progress St & Patrick Henry Dr

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	T	R	L	TR	L	TR
Maximum Queue (ft)	137	112	130	122	31	72	47	15	88
Average Queue (ft)	66	47	61	56	3	28	19	1	33
95th Queue (ft)	109	90	107	101	18	63	46	10	66
Link Distance (ft)	466	466	2120	2120			460		447
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)					225	100		150	
Storage Blk Time (%)						0			
Queuing Penalty (veh)						0			

## Network Summary

Network wide Queuing Penalty: 0

# HCM 2010 Signalized Intersection Summary

1: N Main St & Patrick Henry Dr

11/20/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗ ↘ ↙ ↖ ↗ ↘ ↙ ↖ ↗ ↘ ↙ ↖											
Traffic Volume (veh/h)	131	170	156	53	178	43	147	398	84	75	375	152
Future Volume (veh/h)	131	170	156	53	178	43	147	398	84	75	375	152
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Q <sub>b</sub> ), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A <sub>pbT</sub> )	1.00			0.98	1.00		0.96	0.99		0.98	0.99	0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1900	1900	1845	1900	1881	1869	1900	1900	1863	1900
Adj Flow Rate, veh/h	139	181	166	56	189	46	156	423	89	80	399	162
Adj No. of Lanes	1	1	0	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	0	0	4	4	4	1	2	2	0	2	2
Cap, veh/h	427	218	200	95	332	84	311	765	159	305	546	218
Arrive On Green	0.24	0.24	0.24	0.14	0.14	0.14	0.09	0.26	0.26	0.05	0.22	0.22
Sat Flow, veh/h	1774	906	831	657	2292	578	1792	2914	608	1810	2441	976
Grp Volume(v), veh/h	139	0	347	154	0	137	156	256	256	80	288	273
Grp Sat Flow(s),veh/h/ln	1774	0	1736	1812	0	1715	1792	1776	1746	1810	1770	1648
Q Serve(g_s), s	5.2	0.0	15.2	6.4	0.0	5.9	5.2	10.0	10.1	2.7	12.1	12.4
Cycle Q Clear(g_c), s	5.2	0.0	15.2	6.4	0.0	5.9	5.2	10.0	10.1	2.7	12.1	12.4
Prop In Lane	1.00			0.48	0.36		0.34	1.00		0.35	1.00	0.59
Lane Grp Cap(c), veh/h	427	0	418	263	0	249	311	466	458	305	396	368
V/C Ratio(X)	0.33	0.00	0.83	0.59	0.00	0.55	0.50	0.55	0.56	0.26	0.73	0.74
Avail Cap(c_a), veh/h	632	0	618	645	0	611	607	854	840	675	851	793
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.0	0.0	28.8	32.0	0.0	31.8	21.4	25.4	25.5	22.3	28.8	28.9
Incr Delay (d2), s/veh	0.4	0.0	6.1	2.1	0.0	1.9	1.3	1.0	1.1	0.5	2.6	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	7.9	3.3	0.0	2.9	2.6	5.0	5.0	1.4	6.2	5.9
LnGrp Delay(d),s/veh	25.5	0.0	34.9	34.1	0.0	33.7	22.7	26.5	26.6	22.8	31.4	31.9
LnGrp LOS	C		C			C	C	C	C	C	C	C
Approach Vol, veh/h	486				291			668			641	
Approach Delay, s/veh	32.2				33.9			25.6			30.5	
Approach LOS	C				C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2	3	4		6	7	8					
Phs Duration (G+Y+R <sub>c</sub> ), s	25.8	8.7	27.5		18.1	11.8	24.4					
Change Period (Y+R <sub>c</sub> ), s	6.5	4.5	6.5		6.5	4.5	6.5					
Max Green Setting (Gmax), s	28.5	20.5	38.5		28.5	20.5	38.5					
Max Q Clear Time (g_c+l1), s	17.2	4.7	12.1		8.4	7.2	14.4					
Green Ext Time (p_c), s	2.1	0.1	3.1		1.7	0.3	3.5					
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			29.8									
HCM 2010 LOS			C									

## HCM 2010 Signalized Intersection Summary

6: Progress St &amp; Patrick Henry Dr

11/20/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	414	60	76	418	12	77	27	88	7	20	28
Future Volume (veh/h)	55	414	60	76	418	12	77	27	88	7	20	28
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Q <sub>b</sub> ), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A <sub>pbT</sub> )	1.00		0.96	1.00		0.96	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1881	1900	1900	1843	1900	1727	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	57	427	62	78	431	12	79	28	91	7	21	29
Adj No. of Lanes	0	2	0	0	2	1	1	1	0	1	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	2	2	0	10	0	0	0	0	0
Cap, veh/h	80	622	95	117	684	350	126	61	198	125	108	149
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.08	0.16	0.16	0.07	0.15	0.15
Sat Flow, veh/h	365	2847	433	522	3047	1557	1645	383	1245	1810	715	987
Grp Volume(v), veh/h	291	0	255	272	237	12	79	0	119	7	0	50
Grp Sat Flow(s),veh/h/ln	1863	0	1782	1817	1751	1557	1645	0	1629	1810	0	1702
Q Serve(g_s), s	9.7	0.0	8.7	9.1	8.1	0.4	3.1	0.0	4.4	0.2	0.0	1.7
Cycle Q Clear(g_c), s	9.7	0.0	8.7	9.1	8.1	0.4	3.1	0.0	4.4	0.2	0.0	1.7
Prop In Lane	0.20		0.24	0.29		1.00	1.00		0.76	1.00		0.58
Lane Grp Cap(c), veh/h	407	0	389	408	393	350	126	0	259	125	0	257
V/C Ratio(X)	0.71	0.00	0.66	0.67	0.60	0.03	0.63	0.00	0.46	0.06	0.00	0.19
Avail Cap(c_a), veh/h	683	0	654	667	642	571	394	0	439	433	0	459
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.2	0.0	23.8	23.6	23.2	20.2	29.9	0.0	25.5	29.1	0.0	24.8
Incr Delay (d2), s/veh	2.4	0.0	1.9	1.9	1.5	0.0	5.1	0.0	1.3	0.2	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	0.0	4.5	4.7	4.1	0.2	1.6	0.0	2.1	0.1	0.0	0.8
LnGrp Delay(d),s/veh	26.5	0.0	25.7	25.5	24.7	20.3	35.0	0.0	26.8	29.3	0.0	25.2
LnGrp LOS	C		C	C	C	C	C		C	C		C
Approach Vol, veh/h	546				521				198			57
Approach Delay, s/veh	26.1				25.0				30.0			25.7
Approach LOS	C				C				C			C
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2	3	4		6	7	8					
Phs Duration (G+Y+R <sub>c</sub> ), s	20.1	10.1	16.1		20.5	10.6	15.6					
Change Period (Y+R <sub>c</sub> ), s	5.5	5.5	5.5		5.5	5.5	5.5					
Max Green Setting (Gmax), s	24.5	16.0	18.0		24.5	16.0	18.0					
Max Q Clear Time (g_c+l1), s	11.7	2.2	6.4		11.1	5.1	3.7					
Green Ext Time (p_c), s	2.9	0.0	0.5		2.7	0.1	0.1					
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			26.3									
HCM 2010 LOS			C									

### Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	4:45	4:45	4:45	4:45	4:45	4:45	4:45
End Time	6:00	6:00	6:00	6:00	6:00	6:00	6:00
Total Time (min)	75	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	2279	2350	2375	2353	2256	2188	2382
Vehs Exited	2249	2353	2386	2333	2267	2201	2401
Starting Vehs	46	62	58	44	75	64	85
Ending Vehs	76	59	47	64	64	51	66
Travel Distance (mi)	835	841	864	836	800	781	865
Travel Time (hr)	60.1	61.4	62.7	59.4	56.5	55.4	62.7
Total Delay (hr)	27.1	28.3	28.8	26.5	25.1	24.6	28.5
Total Stops	2509	2549	2611	2497	2418	2315	2609
Fuel Used (gal)	37.3	38.1	39.1	37.3	35.8	34.9	38.9

### Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	4:45	4:45	4:45	4:45
End Time	6:00	6:00	6:00	6:00
Total Time (min)	75	75	75	75
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	2391	2273	2274	2312
Vehs Exited	2396	2253	2276	2313
Starting Vehs	56	48	68	61
Ending Vehs	51	68	66	59
Travel Distance (mi)	845	817	813	830
Travel Time (hr)	63.5	59.7	57.9	59.9
Total Delay (hr)	30.2	27.5	25.9	27.3
Total Stops	2629	2526	2450	2512
Fuel Used (gal)	38.6	37.0	36.3	37.3

### Interval #0 Information Seeding

Start Time	4:45
End Time	5:00
Total Time (min)	15
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

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**Interval #1 Information Recording**

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Start Time 5:00

End Time 6:00

Total Time (min) 60

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2279	2350	2375	2353	2256	2188	2382
Vehs Exited	2249	2353	2386	2333	2267	2201	2401
Starting Vehs	46	62	58	44	75	64	85
Ending Vehs	76	59	47	64	64	51	66
Travel Distance (mi)	835	841	864	836	800	781	865
Travel Time (hr)	60.1	61.4	62.7	59.4	56.5	55.4	62.7
Total Delay (hr)	27.1	28.3	28.8	26.5	25.1	24.6	28.5
Total Stops	2509	2549	2611	2497	2418	2315	2609
Fuel Used (gal)	37.3	38.1	39.1	37.3	35.8	34.9	38.9

**Interval #1 Information Recording**

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Start Time 5:00

End Time 6:00

Total Time (min) 60

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2391	2273	2274	2312
Vehs Exited	2396	2253	2276	2313
Starting Vehs	56	48	68	61
Ending Vehs	51	68	66	59
Travel Distance (mi)	845	817	813	830
Travel Time (hr)	63.5	59.7	57.9	59.9
Total Delay (hr)	30.2	27.5	25.9	27.3
Total Stops	2629	2526	2450	2512
Fuel Used (gal)	38.6	37.0	36.3	37.3

# Queuing and Blocking Report

## Baseline

11/20/2018

### Intersection: 1: N Main St & Patrick Henry Dr

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	LT	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	184	358	228	184	150	252	216	143	252	244
Average Queue (ft)	81	196	126	65	87	135	107	47	144	124
95th Queue (ft)	150	328	195	148	158	221	187	98	224	212
Link Distance (ft)	2120	2120	454	454		466	466		454	454
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)					150		250			
Storage Blk Time (%)					1	5		0	0	
Queuing Penalty (veh)					1	8		0	0	

### Intersection: 6: Progress St & Patrick Henry Dr

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	T	R	L	TR	L	TR
Maximum Queue (ft)	234	200	204	205	36	96	176	33	66
Average Queue (ft)	140	106	113	115	8	56	50	5	23
95th Queue (ft)	209	184	178	181	30	96	117	23	52
Link Distance (ft)	466	466	2120	2120			460		447
Upstream Blk Time (%)					225	100		150	
Queuing Penalty (veh)					0		2	1	
Storage Bay Dist (ft)					0		2	1	
Storage Blk Time (%)									
Queuing Penalty (veh)									

## Network Summary

Network wide Queuing Penalty: 12